UNIVERSITY COLLEGE,

BRISTOL.

CALENDAR FOR THE SESSION

1882-3.

Digitized by the Internet Archive
in 2008 with funding from
Microsoft Corporation

http://www.archive.org/details/calendar188283brisuoft

B

UNIVERSITY COLLEGE, BRISTOL.

CALENDAR, 1882-3.

BRISTOL:
ARROWSMITH, PRINTER, QUAY STREET.

1882.

The College supplies for persons of either sex above the ordinary school age the means of continuing their studies in Science, Languages, History and Literature; and particularly affords appropriate instruction in those branches of Applied Science which are more nearly connected with the arts and manufactures. A course of instruction has been arranged for students intending to become Engineers, Surveyors, or Architects. Special attention is given to class teaching and laboratory work.

Evening Lectures and Classes.

The wants of teachers, clerks, artisans and others, who are employed during the day, are supplied by evening classes and courses of lectures, to which admission may be obtained at low fees.

School of Medicine.

Medical education is provided by the Bristol Medical School, which is affiliated to the College.

New Buildings in Tyndall's Park.

All the College classes are now held in the new buildings in Tyndall's Park, where all inquiries and applications for admission to any of the Classes must be made.

Information respecting the lodgings of students coming from a distance will be given by the Principal on application through the Registrar and Secretary. The Principal is also prepared to give information with regard to homes where women students can be received.

The Calendar is published at the end of the third Term in each year. An Appendix is published in October, containing the list of Honours obtained in the Examinations at the end of the third Term, and an account of such changes as take place during the vacation. This is to be had gratis, on application to the Registrar and Secretary.

CONTENTS.

	Page.
Governors of the College	4
Council	5
Professors and Lecturers	6
Calendar	7
Gilchrist Scholarships	8
College Scholarships	9
Ordinary Certificates	10
Honour Certificates	11
Associateships	12
Day Lectures—	
General Regulations	13
Fees	14
Department of Civil, Mechanical and Electric Engineering	15
Subjects of Instruction	20
Time Table	48
Scholars 1881-82	49
Honours	49
Evening Lectures—	
General Regulations	54
Fees	54
Subjects of Instruction	55
Time Table	68
Honours 1881-82	69
Form of Bequest	72

UNIVERSITY COLLEGE, BRISTOL.

GOVERNORS OF THE COLLEGE.

(1) All Donors of £50 and upwards, *for life;* and all Annual Subscribers of £5 and upwards, *during subscription.*

(2) Nominees of Corporate Bodies or Associations, who are Donors of £250 or upwards, *in perpetuity;* or Annual Subscribers of £10 or upwards, *during subscription.*

(3) Certain Official and Representative persons.

Eleven Members of the Council are elected by the Governors.

All Governors are entitled to vote on the following scale:—

Corporate Bodies, or Associations.		Individuals or Firms.			To have votes as under on account of contributions.
Donors of	Subscribers of	Donors of	Subscribers of		
£250	£10	£50	£5	.....	1
500	20	100	10	.....	2
1000	50	250	25	.....	3
2000	100	500	50	.....	4
3000	150	750	75	.....	5
4000	200	1000	100	.....	6

President.

THE VERY REV. GILBERT ELLIOT, D.D., Dean of Bristol.

Principal.

WILLIAM RAMSAY, Ph.D.

Council.

Albert Fry, Esq., *Chairman.* (1)
William Killigrew Wait, Esq., *Vice-Chairman.* (8)
William Proctor Baker, Esq., *Treasurer.* (1)
Francis Nonus Budd, M.A., Senior Fellow of Gonville and Caius College, Cambridge. (1)
Rev. John Wm. Caldicott, D.D., Head Master of the Grammar School, Bristol. (1)
Nelson C. Dobson, F.R.C.S. (9)
Very Rev. Gilbert Elliot, D.D. (11)
Lewis Fry, Esq., M.P. (1)
Rev. Hereford B. George, M.A., Fellow and Tutor of New College, Oxford. (7)
William Edwards George, Esq. (1)
Rev. Frederic William Gotch, M.A., LL.D., President of the Baptist College, Bristol. (1)
Rev. B. Jowett, M.A., Master of Balliol College and Regius Professor of Greek, Oxford. (2)
Rev. John Percival, M.A., LL.D., President of Trinity College, Oxford. (1)
George Frederick Schacht, F.C.S., Vice-President of the Pharmaceutical Society of Great Britain. (1)
Henry J. S. Smith, M.A., LL.D., F.R.S., Savilian Professor of Mathematics, Oxford. (6)
William Smith, Esq. (1)
William H. Spencer, M.A., M.D. (9)
James Stuart, M.A., Professor of Mechanism and Applied Mechanics, Cambridge. (3)
Rev. James M. Wilson, M.A., Head Master of Clifton College. (5)
Philip J. Worsley, B.A. (4)
James Wyld, D.C.L. (10)

(1) Elected by the Governors of the College. (2) Nominated by the Vice-Chancellor of the University of Oxford. (3) Nominated by the Vice-Chancellor of the University of Cambridge. (4) Nominated by the Vice-Chancellor of the University of London. (5) Nominated by the Lord President of the Privy Council. (6) Nominated by Balliol College, Oxford. (7) Nominated by New College, Oxford. (8) Nominated by the Principal and Professors of the College. (9) Nominated by the Bristol Medical School. (10) Nominated by the Worshipful the Clothworkers' Company. (11) *Ex-officio* a Member of the Council.

Registrar and Secretary.

J. N. Langley, LL.D.

Bankers.

Messrs. Miles, Cave, Baillie & Co., Bristol Old Bank.

PROFESSORS AND LECTURERS.

Chemistry	Professor, W. RAMSAY, Ph.D. Lecturer and Demonstrator, SYDNEY YOUNG, D.Sc.
Mathematics	Lecturer, EDWARD BUCK, B.A.
Experimental Physics	Professor, S. P. THOMPSON, D.Sc., B.A. Demonstrator, C. C. STARLING.
Engineering	Professor, H. S. HELE SHAW.
Geology and Zoology	Professor, W. J. SOLLAS, M.A.
Botany	Lecturer, A. LEIPNER.
Political Economy	Professor, ALFRED MARSHALL, M.A. Lecturer, MARY PALEY MARSHALL.
Modern History and English Literature	Professor, JAMES ROWLEY, M.A.
Greek, Latin, Ancient History and Literature	Professor, R. FANSHAWE, M.A., late Fellow of New College, Oxford.
Hebrew	Lecturer, BERNHARD HEYMANN.
French	Lecturers, EUGÈNE PELLISSIER, M.A., LL.B., B.Sc. A. d'OURSY, B.A.
German	Lecturer, A. LEIPNER.

Calendar.

DAY AND EVENING CLASSES, 1882—83.

	SEPTEMBER—1882.	
27	Candidates for College Scholarships to send in their names.	W
29	Scholarship Examinations begin.	F
	OCTOBER.	
5	Admission of Day Students begins.	Th
7	Opening Lecture at 8 p.m., in the lecture room of the Bristol Museum and Library.	S
9	First Term begins for Day Classes.	M
12	First Term begins for Evening Classes.	Th*
	DECEMBER.	
11	First Term Examinations begin.	M
16	First Term ends.	S
	JANUARY—1883.	
15	Second Term begins for Day Classes.	M
18	Second Term begins for Evening Classes.	Th*
	MARCH.	
17	Candidates for Science and Art Examinations to fill up forms previous to this date.	S
23	Good Friday. College closed.	F
24	College closed.	S
26	Monday in Easter Week. College closed.	M
28	Second Term Examinations begin.	W
	APRIL.	
3	Second Term ends.	Tu
26	Third Term begins for Day and Evening Classes.	Th
	MAY.	
14	Monday in Whitsun Week } College closed.	M
15	Tuesday in Whitsun Week } College closed.	Tu
	JUNE.	
1	Candidates for Gilchrist Scholarship to send in their names.	F
4	Oxford University Examination for Women begins.	M
18	Cambridge University Higher Local Examination begins in the College.	M
18	London University Matriculation Examination begins in the College.	M
25	Third Term Examinations begin.	M
30	Third Term ends.	S

Information respecting terms of the Medical School will be found further on.

* Evening Classes in Chemistry, Experimental Physics, Machine and Geometrical Drawing begin on the same days as the Day Classes.

Scholarships tenable at the College.

GILCHRIST SCHOLARSHIPS.

Secretary to the Gilchrist Educational Trust:
WILLIAM B. CARPENTER, M.D., C.B., F.R.S.,
4 Broad Sanctuary, Westminster, S.W.

Conditions for Scholarship instituted by the Gilchrist Educational Trust in connection with University College, Bristol:

A Scholarship of the value of £50 per annum, tenable for Three Years, will be annually awarded by Competitive Examination, under the following conditions:—

1.—Every Candidate must apply to the Principal of University College, Bristol, before 1st June, and submit to him a certificate of age and satisfactory testimonials to character.

2.—Every Candidate must have completed his *sixteenth* year, and his age on the day of election must not exceed *eighteen* years.

3.—Candidates approved by the Principal shall present themselves at the Midsummer Matriculation Examination of the University of London; and the Scholarship of £50 shall be awarded to the Candidate who shall stand highest at that Examination, provided that he pass in the *Honours* Division.

4.—Every Scholar shall attend in each year at least Three Courses of Lectures, to be selected by himself, in University College, Bristol, provided that the total number of lectures in such courses averages twelve lectures per week throughout the session. But, if permitted by the authorities of the College, he may spend his third year at some other college.

5.—Every Scholar shall present, on his applying for each half-yearly instalment of his Scholarship (which will

be payable on the 1st of January and the 1st of July), a certificate from the Principal of University College, Bristol, that his conduct has been good, and that he is pursuing his studies with a view to graduation in the University of London, in one of the following Faculties: Arts, Laws, Science or Medicine.

6.—Every Scholar shall be required to present himself at the Intermediate Examination in one of the above-named Faculties of the University of London, at an interval of not more than two academical years from his election, unless excused from doing so by the Gilchrist Trustees; and if he do not so present himself (unless by permission of the Trustees), or if he fail to pass the Examination, he shall be considered as having forfeited his claim to the remaining instalments of his Scholarship.

NOTE (1) These Scholarships are open to Women.
(2) Half-a-day of Laboratory work will be taken as equivalent to a Lecture.

COLLEGE SCHOLARSHIPS.

The following College Scholarships will be competed for in September and October, 1882:—

Three General Scholarships of the value of £25, £15, and £10 respectively, tenable for one year, open to men and women.

One Chemical Scholarship of the value of £25, tenable for one year, open to men and women.

Two Catherine Winkworth Scholarships of £15 each, tenable for one year, open only to women who have not held a Scholarship at the College for more than one year.

The subjects of Examination will be:—

CHEMISTRY (including Laboratory Work).
ARITHMETIC.
EUCLID.
ALGEBRA.
TRIGONOMETRY.
CONICS (Geometrical and Analytical).
DIFFERENTIAL AND INTEGRAL CALCULUS.
APPLIED MECHANICS.
GEOMETRICAL DRAWING (Plane and Solid).
MACHINE CONSTRUCTION AND DRAWING.

HEAT, SOUND AND LIGHT.
ELECTRICITY AND MAGNETISM.
GEOLOGY AND PHYSICAL GEOGRAPHY.
ZOOLOGY AND PALÆONTOLOGY.
BOTANY, Structural and Physiological.
POLITICAL ECONOMY.
MORAL PHILOSOPHY.
ENGLISH HISTORY, from the accession of Henry II. to the death of Edward I.
ENGLISH LITERATURE, from the birth of Addison to the death of Pope.
GREEK LANGUAGE, LITERATURE AND HISTORY.
LATIN LANGUAGE, LITERATURE AND HISTORY.
FRENCH LANGUAGE AND LITERATURE.
GERMAN LANGUAGE AND LITERATURE.

Candidates will be allowed to enter in as many of the above subjects as they choose. Twenty per cent. of the full marks in each subject will be deducted from the marks obtained by each candidate before adding them up to form the total of the candidate's marks. Information as to the full marks for each subject can be obtained on application to the Principal.

Candidates must send in their names and lists of subjects not later than Wednesday, the 27th September, to the Registrar and Secretary of University College, Bristol. The minimum age is fixed at sixteen. The successful candidates must be prepared to show certificates of birth, and give references if required.

The Examination will begin at ten o'clock on Friday, the 29th September.

The Chemical Scholarship will be awarded principally by the marks obtained in Chemistry; but in case the marks obtained in it by the best candidates are nearly equal, account will be taken of their marks in other subjects.

The Chemical Scholar will in general be required to work in the Laboratory for six days a week during the Session 1882–83. Every other Scholar will be required to attend at least two courses of lectures, in the day time, in each of the three Terms of the Session.

ORDINARY CERTIFICATES.

Any student who diligently attends a course of instruction in any subject during a Session, and obtains a

place in the first or second class in the Examination at the end of the course, shall be entitled to receive a certificate from the College.

HONOUR CERTIFICATES.

1. An *Honour Certificate* shall be granted, after examination, to any student of the College who has diligently attended a course of instruction in any one of the subjects specified below, for three hours a week during three Terms, or two hours a week during four Terms:—

GROUP I.

Inorganic Chemistry.
Organic Chemistry.
Pure Mathematics.
Applied Mathematics.
Engineering, Part I. (viz., the Theory of Structures and Mechanical Drawing).
Engineering, Part II. (viz., Geometrical Drawing, and either the Theory of Machines or Surveying).
Physics.
Geology.
Zoology.
Botany.

GROUP II.

Political Economy.
Logic.
Moral Philosophy.

GROUP III.

Modern History.
English Language and Literature.
Greek Language and Literature.
Latin Language and Literature.
Greek and Roman History.
French Language and Literature.
German Language and Literature.

Before proceeding to Examination the consent of the Principal must be obtained.

2. *Times of Examination.* The Examination for Certificates will in general be held at the end of June, except in Inorganic Chemistry and Engineering, in which subjects the Examination will be held at the end of March.

3. *Fees for Examination.* Each candidate shall pay 10/– for examination in each subject.

ASSOCIATESHIPS.

1. The title of Associate of University College, Bristol, will be conferred on all candidates who—

A.—Shall have diligently attended an amount of instruction in the College equivalent to three courses of three hours a week each in each of three Terms during two Sessions; and shall have obtained a certificate of satisfactory conduct; and

B.—Shall have obtained some one of the four following distinctions, namely—

(i) College Honour Certificates in four subjects, not more than three of which are in any one "Group," provided that if three of them are in Group III. one of them be Latin;

(ii) A certificate, granted by the Examiners and approved by the Council, of having produced an essay or original investigation of exceptional merit, together with Honour Certificates in three subjects;

(iii) The degree of B.A., B.Sc., M.A., M.D. or M.S. of some University in the United Kingdom; or

(iv) Such distinction in the Oxford University Examination for Women or the Cambridge University Higher Local Examination as from time to time shall be considered sufficient.*

2. The title of Associate in Engineering shall be granted, on application, to all candidates who have complied with condition A and who obtain an Honour Certificate in Engineering, Part I., and in Engineering, Part II., and in three of the subjects Pure Mathematics, Applied Mathematics, Physics, Geology, and Chemistry; provided that one at least of his certificates be in Pure or Applied Mathematics.

3. The title of Associate in Chemistry shall be granted,

* For the present a class in Honours in each of two sections of the second part of the Oxford Examination will be considered sufficient; or a first class in each of two of the four Groups B, C, D, E of the Cambridge Examination and a second class in a third group.

on application, to all candidates who have complied with condition A, and who obtain Honour Certificates in Inorganic and in Organic Chemistry, and in either Pure Mathematics or Physics; and who pass satisfactory examinations in Qualitative and Quantitative Analysis.

4. Associates shall be entitled to admission to such lectures and on such terms as the Council shall from time to time direct.

NOTE.—For the present they shall be admitted free to all day lectures.

5. The Council may elect, on the recommendation of the Educational Board, former students of the College who, though not possessed of the foregoing qualifications, shall have distinguished themselves in Literature, Science or Art, or in some career of public usefulness; provided that no person shall be so recommended within seven years after he has first entered as a Student.

6. Every Associate shall hold his Associateship and enjoy its privileges subject to the rules and regulations for the time being in force in the College, and may be deprived of it by the Council on the recommendation of the Educational Board.

DAY LECTURES.

GENERAL REGULATIONS.

(1.) Persons under the age of 16 years seeking admission as day students will be required to pass an entrance examination in English Grammar and Composition, and in Elementary Mathematics. This examination will in general be held on the first day of Term, but any candidate who desires to be admitted to it must give two days' notice.

(2.) The Principal will attend at the College for the purpose of admitting students at the beginning of each Term.

(3.) Every candidate for admission may be required to produce such testimonial of good character as shall be satisfactory to the Principal.

(4.) Every student on admission must sign an undertaking to observe all the regulations affecting students made by the Council of the College for the time being.

(5.) A card of admission to the several classes is issued by the Registrar and Secretary, on the presentation of a certificate signed by the Principal and on payment of the fees. No student is entitled to attend the classes until he has complied with this regulation. The first lecture of every course will however be free.

(6.) A record will be kept of the attendance of students. A report of the attendance of any student will be periodically sent to his parents or guardians if they require it.

(7.) An entrance fee of 7s. is charged for each course, but all such fees may be compounded for by the payment of a single registration fee of £1 1s.

(8.) Disorderly conduct on the part of any student will be reported to the Principal, who will adopt such action thereon as he may deem necessary.

(9.) Every student is required to provide himself with a College Calendar.

FEES.

The fees are as a rule:—For a course of instruction of three or more hours a week, £5 5s. for three Terms, £4 4s. for two consecutive Terms, £3 3s. for the first or second Terms singly, £2 2s. for the third Term. A few exceptions to this rule will be found in the statements of fees which are appended to the accounts given further on of the subjects of the several courses.

DEPARTMENT OF CIVIL, MECHANICAL AND ELECTRIC ENGINEERING.

The instruction in this department is designed to afford a thorough scientific education for students intending to become Engineers, Architects or Surveyors; and to supplement the ordinary professional training by systematic technical teaching. The courses of lectures are so arranged that the work of the first two Terms in each year is nearly the same for the three branches of Civil, Mechanical and Electric Engineering. For the remainder of each Session a student is enabled to specialize his studies in that branch for which he displays most aptitude.

Civil Engineering.

This course is intended to meet the generally acknowledged want of a preparatory training for one or two years before the usual entrance as articled pupil in the office of a Civil Engineer, Architect or Surveyor. Pupils are now usually articled for the comparatively short term of three years, and this course possesses the advantage of utilising the interval between leaving school and entering the office. The course extends throughout the whole Session, but the third Term in each year is specially devoted to Civil Engineering subjects, including field work and the principles of building construction.

The following local Civil Engineers have expressed their approval of the course of instruction given in this Department. They also recommend it as a suitable preparation for persons intending to enter their offices as articled pupils, and in this capacity they

will, if convenient, receive students of the Civil Engineering Department of the College:—

Mr. Frederick Ashmead, Local Board of Health, Bristol.
Mr. H. Percy Boulnois, City Surveyor, Exeter.
Mr. Francis Fox, Great Western Railway, Bristol.
Mr. James Henderson, Truro.
Mr. Thomas Howard, Bristol.
Messrs. Thomas and William Morgans, Bristol.
Mr. Charles Richardson, Bristol. Severn Tunnel.
Mr. T. J. Scoones, Bristol.
Mr. Thomas Waring, Cardiff.

Mechanical Engineering.

The course in Mechanical Engineering, which extends over three years, is so arranged that students can pursue it during the six winter months of each year, that is, during the first two Terms of the Session. The following Manufacturing Engineers in the neighbourhood have consented at the request of the Council to receive students of the College into their offices and workshops during the summer months as articled pupils:—

The Bristol Wagon Works Co., Limited.
Messrs. Bush and de Soyres, Bristol.
Messrs. Cox and Co., Shipbuilders, Falmouth.
Messrs. Ellacott and Son, Plymouth.
Messrs. Fielding and Platt, Atlas Iron Works, Gloucester.
The Isca Foundry Co., Newport, Mon.
Messrs. John Lysaght, Limited, Bristol.
Messrs. Newall and Ogilvie, Bristol.
Messrs. Spencer and Gillett, Melksham, Wilts.
Messrs. G. K. Stothert and Co., Bristol.
Messrs. Stothert and Pitt, Bath.
The Uskside Co., Newport, Mon.
Messrs. John Watts and Co., Bristol.

Engineering students can obtain a statement of the premium required on application to the Registrar and Secretary, and any further information from the respective firms.

Electric Engineering.

The course for Electric Engineers also extends over three years, and includes a number of the subjects of the general Engineering course, together

with courses in Electricity and Magnetism, and their technical applications to Electric Lighting and Transmission of Power; Telephones and Telephonic Systems, Telegraphy, Electro-plating, &c. There will also be a course of practical instruction in the Electrical Laboratory.

As in the Civil Engineering course, the third Term in each Session is devoted to the work of this special branch.

The undermentioned courses are sketched out as a guide to students, but they are not obligatory. For instance, it may happen that a student may with advantage take the second or third year's course of Mathematics in his first year; or he may find it convenient to postpone to his second year one or more of the first year courses, and to his third year one or more of the second year courses. He may further at the end of the first or second Session change the special branch which he has hitherto taken up should it be deemed advisable.

The Principal, or Professor Thompson, or Professor Shaw, will be ready to give advice on the selection of classes to students not attending the full Engineering course.

Professor Sollas and Dr. Langley are willing to receive into their houses during the College Session students whose parents reside at a distance. For information with regard to terms, &c., apply to them, or to the Principal.

FIRST YEAR.

FIRST AND SECOND TERMS.

(1) Mathematics, Elementary Course ... ... p. 23
(2) First Year's Engineering ... ... p. 28
(3) Engineering Drawing and Graphic Methods ... ... p. 32
(4) Experimental Physics ... ... p. 24
(5) Chemistry ... ... p. 20

THIRD TERM.

Civil Engineering :—

(1) Mathematics, Elementary Course (continued) ... ... p. 23
(2) First Year's Civil Engineering ... ... p. 28
(3) Surveying and Field Work ... ... p. 33
(4) Experimental Physics ... ... p. 24
(5) Chemistry ... ... p. 20

Mechanical Engineering :—

Works—Fitting Shop and Forge.

Electric Engineering :—

(1) Mathematics, Elementary Course (continued) ... ... p. 23
(2) Experimental Physics and Physical Laboratory ... ... p. 24
(3) Chemistry and Chemical Laboratory ... ... p. 20

SECOND YEAR.

FIRST AND SECOND TERMS.

(1) Mathematics and Mechanics, Advanced Course ... ... p. 23
(2) Second Year's Engineering ... ... p. 29
(3) Engineering Design and Drawing ... ... p. 32
(4) *Civil Engineering*, Geology ... ... p. 34
Mechanical Engineering, Geometrical Drawing ... ... p. 31
Electric Engineering, Experimental Physics ... ... p. 24

THIRD TERM.

Civil Engineering :—

(1) Mathematics and Mechanics, Advanced Course (continued) p. 23
(2) Second Year's Civil Engineering ... ... p. 29
(3) Surveying, Advanced Course ... ... p. 33
(4) Lithology ... ... p. 36

Mechanical Engineering :—

Works—Pattern Shop and Foundry.

Electric Engineering :—

(1) Mathematics and Mechanics, Advanced Course (continued) p. 23
(2) Experimental Physics and Electrical Laboratory ... ... p. 24
(3) Chemistry and Chemical Laboratory ... ... p. 20

THIRD YEAR.

FIRST AND SECOND TERMS.

(1) Higher Mathematics and Mechanics ... ... p. 23
(2) Third Year's Engineering ... ... p. 30
(3) *Mechanical Engineering*, Engineering Design and Drawing p. 32
Electric Engineering, Electricity and Electrical Laboratory p. 24

THIRD TERM.

Mechanical Engineering :—

Works—Drawing Office.

Electric Engineering :—

(1) Higher Mathematics ... ... p. 23
(2) Electrical Laboratory ... ... p. 27

FEES.

The fees are stated in connection with the detailed syllabus of the respective courses. They will be found to be generally five guineas for three Terms, four guineas for two Terms, and three guineas for one Term. The fee for each of the general Engineering courses is however six guineas, for the Civil Engineering course, three guineas.

The fee for practice in the Chemical Laboratory is five and a half guineas for students who attend two days in the week for two Terms, or seven and a half guineas for three days in the week for two Terms, four guineas for three days in the week for one Term.

There is however a substantial reduction made in the case of those students who take the complete system of courses of the Engineering School. The compounded fees are :—

First Year.—*Civil or Electric Engineering*, three Terms, thirty guineas; *Mechanical Engineering*, two Terms, twenty guineas.

Second Year.—*Civil* or *Electric Engineering*, three Terms, twenty-six guineas; *Mechanical Engineering*, two Terms, twenty guineas.

Third Year.—*Electric Engineering*, three Terms, twenty-six guineas; *Mechanical Engineering*, two Terms, twenty guineas.

Day Lectures.

SUBJECTS OF INSTRUCTION.

CHEMISTRY.

Professor, W. RAMSAY, Ph.D.

Lecturer, SYDNEY YOUNG, D.Sc.

INORGANIC CHEMISTRY.

This course treats of the principles of Chemistry, and of the Chemistry of the Non-Metals and Metals.

Lectures will be given at nine o'clock on Mondays, Wednesdays, Fridays and Saturdays during the first and second Terms.

The lectures will be illustrated with experiments and diagrams.

Examinations will be held from time to time during the course.

SYLLABUS.

Principles of Chemistry.

Ancient and Modern Ideas of the Nature of Matter — Elements — Compounds and Mixtures—Synthesis and Analysis—Laws of Chemical Combination—Properties of Gases—Atomic Weights—Diffusion of Gases — Specific Heats — Molecular Weights — Specific Heat of Compounds — Specific Volumes of Liquids and Solids—Heat of Combination—Spectroscopy—Relations of Light and Electricity to Chemistry—Influence of Time and Mass on Chemical Processes.

Non-Metals.

The Non-Metals will be described in their order; their properties, and the properties of their compounds, and the relation subsisting between them will be shown.

Metals.

Periodic Laws—All the more important metals and their salts will be described ; together with the methods of extraction from their ores and the preparation of their compounds.

Fee, £4 4s. for two Terms, £3 3s. for one Term.

Text-books.—Roscoe and Schorlemmer's *Treatise on Chemistry;* Thorpe's *Inorganic Chemistry;* Fowne's *Manual of Inorganic Chemistry;* Miller's *Elements of Chemistry.*

Special Laboratory Course.

Special instruction will be given on Tuesdays and Thursdays from 4 to 6. The course is designed for students entering for elementary examinations in Chemistry, and others to whom the hour may prove convenient.

Fee, £3 3s. for two Terms, £2 2s. for one Term.

Organic Chemistry.

This course will relate to the more important groups of the Compounds of Carbon.

Lectures will be given during the second Term on Tuesdays and Thursdays at nine o'clock: during the third Term on Tuesdays, Thursdays and Saturdays at nine o'clock.

Students are recommended to take this course during the second year of their chemical studies, but, if necessary, they can take it during their first.

Syllabus.

History of the Chemistry of Carbon—Determination of the Composition of Carbon compounds—Empirical and Rational formulæ—Classification—Hydrocarbons — Alcohols — Carbohydrates — Aldehydes and Ketones—Acids—Simple and Compound Ethers—Compound Ammonias—Characteristics of Aromatic substances—Benzene and its derivatives—Napthalene and Anthracene and their derivatives—

Pyridine, Chinoline, and their derivatives—Dyes—Alkaloids—Animal and Vegetable Educts.

Special Lectures.

The Paraffin Industry—Brewing and Distilling—Acetic Acid Manufacture—Soap Making and Candles—Sugar—Explosives—Artificial Colours and Dyes—The Alkaloids.

Fee, £3 3s.

Text-books.—Armstrong's *Organic Chemistry ;* Schorlemmer's *Chemistry of the Carbon Compounds ;* Armstrong and Grove—*Vol. III. of* Miller's *Chemistry.*

ADVANCED COURSE.

This course will be given on Saturdays at 9 o'clock during the first and second Terms, and will be devoted to a more minute consideration of Chemical Theory, as shown in recent researches.

Fee, £2 2s.

PRACTICAL CHEMISTRY.—LABORATORY INSTRUCTION.

The Laboratory is open daily, from 10 a.m. to 5 p.m., except on Saturdays, when it closes at 1 p.m. Instruction is given in the Laboratory on all branches of Practical Chemistry, including Qualitative and Quantitative Inorganic and Organic Analysis, the preparation of Chemical Products, and Inorganic and Organic Research. Special facilities will be afforded to those who desire to study Practical Chemistry as applied to the different processes employed in the Arts and Manufactures. The Laboratory will be under the immediate supervision of the Professor and of the Lecturer.

Each student will be required to provide, at his own expense, a set of ordinary apparatus, at a cost of about 21s. Expensive apparatus, gas, fuel, water, and the ordinary reagents will be provided by the College. The cost of material for original research must be paid by the student.

FEES IN GUINEAS—

The whole Day.

	6 days a week.	5 days a week.	4 days a week.	3 days a week.	2 days a week.	1 day. a week.
For the Session	18	15	13	10	7½	5
" two Terms	13	11	9	7½	5½	4
" one Term	7	6	5	4	3	2
" one Month	3	3	2	2	1½	

The half Day.

	6 days a week.	5 days a week.	4 days a week.	3 days a week.
For the Session	12	10½	9	7
" two Terms	8½	7½	6	5
" one Term	4½	4	3½	3

EXCURSIONS.

In order that students may have an opportunity of acquiring some knowledge of Applied Chemistry, excursions to some of the Mines and Manufactories of the neighbourhood will occasionally be made. They will be conducted by the Professor or by the Lecturer. Past or present students of the College desirous of taking part in these excursions are invited to apply to the Professor of Chemistry.

MATHEMATICS.

Lecturer, EDWARD BUCK, B.A.

There will be two courses in this subject, comprising:

1.—AN ELEMENTARY COURSE in Arithmetic, Algebra, Euclid, Plane Trigonometry, Geometrical Conic Sections and Elementary Theoretical Mechanics.

These classes will be held on Mondays, Wednesdays and Fridays, from 12 to 1.

Additional classes will be held in these subjects on Mondays, Wednesdays and Fridays at 11, and on Tuesdays, Thursdays and Saturdays at 10, for those to whom these hours may be more convenient.

2.—An Advanced Course in Co-ordinate Geometry of Two and Three Dimensions, Spherical Trigonometry, the Differential and Integral Calculus, Differential Equations, Analytical Statics, the Dynamics of a Particle and of a system of Rigid Bodies, and Hydromechanics.

These classes will be held on Mondays, Wednesdays and Fridays at 10 o'clock.

In addition to the subjects given above, the Lecturer will read any other subjects in Pure or Applied Mathematics which may appear to him suitable to the wants of the students.

Fee, £5 5s. for each course for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Term singly; £2 2s. for the third Term.

EXPERIMENTAL PHYSICS.

Professor, Silvanus P. Thompson, D.Sc., B.A.

Demonstrator, C. C. Starling.

ELEMENTARY COURSE OF SIXTY LECTURES.

Monday, Wednesday, Friday, 11—12.

Two lectures of this course will be delivered in each week during the Session 1882-83. There will also be held one class each week for working problems and for supplementing the experimental work of the lectures.

The lectures will be delivered on Mondays and Fridays at 11 a.m. The supplementary classes will be held on Wednesdays at 10 a.m. for women, at 11 a.m. for men.

FIRST TERM.—GENERAL PHYSICS, HEAT.

Units of Measurement. The Experimental Laws of Motion. General Properties of Solids, Liquids and Gases. Laws of Pressure in Liquids and Gases. Determination of Specific Gravities. Cohesion, Capillarity, Diffusion. General relations of Matter

and Energy. The Law of Conservation of Energy as a fundamental principle of Physics.

Heat.—The effects of Heat on the mechanical properties of solids, liquids and gases. Expansion, apparent and absolute. Thermometers and Pyrometers. Absolute zero of Temperature. The Phenomena of Fusion, Crystallisation, Evaporation, Ebullition and Condensation. Artificial Freezing. Specific Heat. Calorimeters. Latent or Potential Heat. Conduction of Heat. The Safety Lamp. Radiation of Heat. Transmission. Absorption, Reflection, &c., of Heat Rays. Phenomena of Combustion. Value of Fuels. Steam Engines. Relation of Heat to Work. Conservation and Dissipation of Energy.

SECOND TERM.—ELECTRICITY AND MAGNETISM.

Magnetism.—Magnets, natural and artificial. The Compass and Dipping Needle. Measurement of Magnetic Forces. Terrestrial Magnetism. Diamagnetism.

Frictional Electricity.—Fundamental Experiments on Attractions and Repulsions. Notions of Electric Quantity and Distribution. Phenomena of Induction. Electrical Machines. The Leyden Jar. Measurement of Potential Capacity and Quantity. Electrometers.

Current Electricity.—The Voltaic Cell. Batteries. Galvanometers. Electromagnetism. Action between Magnets and Currents. Phenomena of Induced Currents. The Induction Coil. Dynamo-electric Machines. Measurement of Resistance and Electro-motive Force. Chemical Actions of the Current. Electrolysis and Electroplating. Thermo-electricity. Heating effects of the Current. Electric Lighting. Arc Lights. Incandescent Lamps. Accumulators. Telegraphs, Telephones, and Submarine Cables. Electro-motors, and Electric Transmission of Power.

THIRD TERM.—SOUND AND LIGHT.

Sound.—Production and Propagation of Sound Waves. Velocity of Sound. Reflection of Sound. Phonoscopes and Phonographs. Vibrations of Rods, Strings and Columns of Air. Acoustical Interference. Physical Theory of Music. The Vowel Sounds.

Light.—The simple laws of Optics. Velocity and Intensity of Light. Reflexion, Refraction and Dispersion of Light. The Spectroscope. Fluorescence and Phosphorescence. The Chemical, Electrical and Thermal actions of Light. Double Refraction, Polarisation and Diffraction of Light.

Text-book for the course.—Deschanel's *Natural Philosophy*, by Everett, in separate parts—Blackie and Son. The following may with advantage be consulted:—Clerk Maxwell, *Theory of Heat*—Longmans: Balfour Stewart, *Heat*—Macmillan and Co.: S. P. Thompson, *Elementary Lessons in Electricity and Magnetism*—Macmillan and Co.

Fee, entire course, £5 5s.; two consecutive Terms, £4 4s.; first or second Term only, £3 3s,; third Term only, £2 2s.

ADVANCED COURSE.

Wednesday and Friday, 2—3.

An Advanced Course of about forty lessons on Physics treated mathematically and experimentally will be given during the first and second Terms on Wednesdays and Fridays at 2 p.m. The course will comprise the following subjects:—

Heat.—The Laws of Temperature and of Specific and Latent Heat. The Laws of Conduction of Heat. The Laws of the Transformation of Heat. Thermodynamics. The Experimental Determination of Joule's Equivalent, of the ratio of the two specific heats of gases and other thermodynamic constants.

Electricity and Magnetism.—The Laws of Electrostatics. The Laws of Magnets and Electromagnetics. Measurement of Electrical Quantities. Con-

struction of Electrical Standards. The Laws of the Distribution of Electric Currents, and of the Transmission of Electric Energy. Choice of Electric and Magnetic Units. Ratio of the two Systems of Units. The Electromagnetic Theory of Light.

Fee, two Terms, £4 4s.; one Term, £3 3s.

PRACTICAL PHYSICS.—LABORATORY INSTRUCTION.

Monday, Tuesday, Thursday and Friday, 10—5.

A general course of Laboratory Instruction will be carried on under the immediate supervision of the Professor and of his Demonstrator. The object of this course is to provide students with the means of acquiring skill in the use of the instruments of physical measurement and research, and a knowledge of physical experimenting in general. The course includes the practical verification of the more general laws of physics, including acoustics, optics, heat, magnetism and electricity.

A special course of instruction in Electricity will be given to students working in the *Electrical Laboratory*. They will be instructed in the principles and practice of Electric Testing, in the measurement of Electromotive Force, Resistance, Electric Energy, and in the efficiency of Electric Machinery. Instruction will also be given in the management and testing of Dynamo-electric Machines, Electric Arc Lamps and Incandescent Lamps, and in the management and construction of Electric Instruments and Appliances in general use.

Fee, for the Session, £15 15s.; two Terms, £11 11s.; one Term, £6 6s.

NATURAL PHILOSOPHY.

Professor, SILVANUS P. THOMPSON, D.Sc., B.A.

Monday and Wednesday at 12.

A class will be held for systematic instruction in the subject of Natural Philosophy, comprising

Mechanics, Hydrostatics, Pneumatics, Optics and Heat. (This course covers the subjects prescribed for Matriculation in the University of London.)

Text-book.—Lodge's *Elementary Mechanics* (W. and R. Chambers).

Fee, entire course, £5 5s.; two consecutive Terms, £4 4s.; first or second Term only, £3 3s.; third Term only, £2 2s.

ENGINEERING.

Professor, H. S. Hele Shaw.

First Year.

Monday, Wednesday and Friday, 10—11.

First Term.—*Elementary Mechanics, Theoretical and Applied.*—First Principles and Definitions, and Practical Examples of their Application. Calculations connected with Work and Horse Power. Measurement of truly Plane Surfaces. The Laws of Friction, and Application to Brakes, &c. Elements of Hydro-mechanics. Fluid pressure on Walls and Embankments. Floating bodies.

Second Term.—*Nature and Strength of Materials.* Meaning of terms Stress, Strain, Factor of Safety, &c. Testing Machines. Timber. Cast Iron and Castings. Wrought Iron and its uses. The hardening and tempering of Steel. Other metals and different kinds of alloys. Simple calculations connected with the design of Beams and Girders. The Funicular Polygon. The elements of Graphic Statics and Graphic Methods of Calculation.

Third Term.—*Civil Engineering.*—Preservation of Timber. Carpentry of Joints and Connections. Artificial Stones and Cements. Brickwork. Masonry. The stability of Walls and Buttresses. Sub- and Super-structure. Foundations. Piles and Pile Driving. Cofferdams. Stone and Brick Arches. Live and dead load. Structures of greatest strength and economy. Determination of Stresses in Braced

Structures by Moments and by Graphic Methods. Common Roads; Material, Construction, Maintenance and Draining. Stone, Wood and Asphalt Pavement.

Text-books.—First Term, Goodeve's *Principles of Mechanics.* Second Term, Anderson's *Strength of Materials.* Third Term, Law and Burnell's *Civil Engineering.*

Second Year.

Tuesday, Thursday and Saturday, 11—12.

First Term.—*Prime Movers.*—Sources of Energy in Nature. The Power of Men and Animals. Wind and Windmills. Measurement of a source of Water Power and efficiency of a Fall of Water. Construction of Water Wheels and Turbines. Theory of Heat Engines. Fuels of various kinds, their relative efficiencies and practical value. Furnace construction and devices for effecting economical combustion. Transfer of heat from the furnace. Nature and properties of steam. The strength and form of boilers. The inventions of Savary, Newcomen and Watt. Indicators and diagrams, both theoretical and actual. Expansion of steam and steam valves. Apparatus for regulating speed, &c. Varieties of engines—stationary, locomotive, marine and compound. The Pulsometer and Injector. Hot Air Engines. The inventions of Stirling, Ericsson and others. Theoretical advantage and practical objections. Modern improvements in small power engines. Gas Engines. Early failures and modern improvements.

Second Term.—*Theory of Mechanism.*—Trains of Mechanism and Elementary Combinations. Rolling Contact; Pitch and number of Teeth of Wheels. Sliding Contact; Teeth, Spur, Bevel and Skew Bevel; Cams and Wipers, Screw Gearing. Connection by Bands, Pulleys, Belts and Chain Gearing. Connection by Linkwork; Dead Points, Hooke's Coupling. Connection by Reduplication; Pulley

Tackle, Hydraulic Connection. Aggregate Combinations in Mechanism, Shifting Trains, Epicyclic Trains, Sun and Planet Motion, Rolled Paths, &c.

Third Term.—*Civil Engineering.* Problems connected with Beams and Girders, Beams of Greatest Strength for different kinds of loading, Graphic means of finding deflection, Continuous Girders, Weight of Girders, Limiting Span. Suspension Bridges (different forms): Saddles, Form of Chain under given loads; Merits, Defects and Modifications of the ordinary Suspension Bridge, Dredge's, Ordish's and Stiffened Suspension Bridges, Maximum Span. Movable and Swing Bridges. Railways; Broad and Narrow Guage. Different kinds of Rails, their wear and cost. Switches and Crossings. Tunnels and Embankments. Tramways, the different systems of horse and steam traction. Classification of Canals. Laying out and construction of Locks. Foreign Canals. Streams and Rivers. Measurement of velocity at different cross sections. Floods. Different kinds of facings for Banks. Construction of Dams and Weirs. Marine Engineering. Sea Defences and Embankments. Breakwaters. Piers. Harbours. Docks. Supply of Water to Towns. Rain, spring, well and river water. Mode of distribution of water supply. Draining of Lands and Towns. Reclamation and Irrigation of Land.

Text-books.—*The Steam Engine and other Prime Movers*, Rankine; *Elements of Mechanism*, Goodeve. Third Term, *Civil Engineering*, Rankine.

Third Year.

Monday, Wednesday and Friday, 12—1.

First Term.—*Hydraulics and Heat Engines.*—This course will treat of the more difficult portions of the subjects of the second year, including: The Collection and Supply of Water for Power. Theory of Water Wheels and Turbines, with a discussion of their various forms. Water Pressure Engines and

use of Regulator and Accumulator. The properties of Superheated and Saturated Steam. Isothermal and Adiabatic curves and laws of expansion of Steam. De Pambaur's Theory. Theory of the Compound Engine. Theory of Gas and Hot Air Engines. The methods now adopted for testing and estimating the efficiency of engines. Opportunity will be afforded for actually testing and taking Indicator Diagrams from engines at neighbouring works and factories.

Second Term.—*The Theory of Structures and Strength of Materials.*—This course will include a portion of the second year's Civil Engineering Course, but will be modified to suit the requirements of Mechanical Engineers, and will be worked in conjunction with the third year's Engineering Drawing.

Text-book.—*Mechanics of Engineering*, Weisbach (Wiley and Sons, New York).

Fees, for each year's General Engineering course, two Terms, £6 6s.; one Term, £3 13s. 6d.; for each year's Civil Engineering course, £3 3s.

GEOMETRICAL DRAWING.

Professor, H. S. Hele Shaw.

Tuesday and Thursday, 2—4.

A course of forty lessons in Plane Geometrical Drawing and the Application of Descriptive Solid Geometry will be given during the first and second Terms. The course of instruction will include the following subjects:—

Plane Geometry.—The Construction of Scales. The Description of Polygons. The Construction of the Ellipse, Parabola, Hyperbola, and other Curves which are the loci of points under given conditions. The Transformation of Areas.

Solid Geometry.—The Representation of Points and Lines in Space, and also of Simple Solids upon a plane surface by Orthographic Projection. Use of Scales of Slope. Penetrations. Developments. Shadows. Isometrical Projection and the Elements of Radial or Perspective Projection.

Text-books.—Angel's *Practical Geometry and Projection* (Collins, Son and Co.); Sydenham Clarke's *Practical Geometry.*

Fee, for two Terms, £4 4s.; one Term, £3 3s.

ENGINEERING DESIGN AND DRAWING.

Professor, H. S. Hele Shaw.

Monday, Wednesday and Friday, 2—4.

First Year.—(1.) The preparations of tracings and finished drawings. Drawing to scale and from models and actual machines and portions of machines. (2.) Graphical modes of representing results. Graphic arithmetic and composition and resolution of forces. The working out of simple diagrams of stress in connection with the class in Engineering.

Second Year.—(1.) The calculations required in the design of Riveted Joints, Pipes and Cylinders, Journals, Bearings, Toothed, Belt and Rope Gearing, &c. Cranks, Crossheads, Pistons, Valves, &c. (2). Reciprocal Figures. Diagrams of Bending Moment and Shearing Stress in Beams and Girders. Graphic representation of the action of Stationary and Travelling Loads, of the centre of Parallel forces and the Moment of Inertia.

Third Year.—(1.) The Theory of Slide Valve Motions and Diagrams. Design and Drawing of complete Machines from given data. (2.) Stress Diagrams of Braced Beams and Girders for Railway Bridges, and the working out of the more difficult problems in connection with the Third Year's Course of Engineering.

The Courses will be given during the first and second Terms.

Text-books.—*Elements of Machine Design*, W. C. Unwin (Longmans & Co.); *Graphic Statics*, Karl Von Ott (E. & F. N. Spon); *Principles of Graphic Statics*, Sydenham Clarke.

Fee, £4 4s. for each year's course.

SURVEYING.

Professor, H. S. HELE SHAW.

ELEMENTARY COURSE.

Tuesday, 2—5; Thursday, 2—4.

This course will be given during the third Term. Tuesday afternoon will be devoted to practical instruction in the use of Surveying and Levelling Instruments, the keeping of Field Level books, the demarcation of Survey points, and as soon as possible to *Field Practice* in the neighbourhood. Thursday afternoon will be devoted to the theory of Surveying and to the plotting of the Field work.

Text-book.—*Land and Engineering Surveying*, T. Baker, C.E. (Weale's Series).

Fee, £3 3s.

ADVANCED COURSE.

Wednesday and Friday, 2—4.

An advanced course will be given during the third Term on the above days in the theory and practice of Surveying and Levelling, including a discussion of the various methods of Surveying with Chain, Telemeter, Plane Table, Compass, Sextant, and Theodolite; of Levelling operations and Contouring, and the sources of error in Levelling; of Setting out Embankments, Cuttings and Tunnels, and Ranging Curves for Railway work; of Route Surveys by land. Also the correction and adjustment of both Surveying and Levelling instruments.

An afternoon will be devoted once a fortnight to Field Practice.

Text-book.—*Survey Practice*, L. D'A. Jackson (Crosby, Lockwood and Co.)

Fee, £3 3s.

GEOLOGY.

Professor, W. J. Sollas, M.A.

Monday, Wednesday and Friday, 11—12.

This course will be given during the first and second Terms.

The lectures will be illustrated by specimens and diagrams. A paper of questions to be worked out will be set weekly.

Syllabus.

1. The form, general structure and movements of the Earth.

2. The crust of the Earth: general distribution of land-masses (Geography), the structure and arrangement of rock-masses (Petrology), the minute structure of rocks (Lithology,), the characters of lithological units (Mineralogy). Movements of the Earth's crust, Elevation and Depression; Volcanoes and Earthquakes. The internal state of the Earth. Theory of central heat.

3. The Ocean: its distribution, tides, waves and currents. Rivers.

4. The Atmosphere: its extent, winds, clouds and rain (Meteorology).

5. The action of the sea, rivers and atmospheric agents upon the land. Disintegration of rocks, transportal of detritus. Excavation of river valleys, waste of coast-lines. Deposition of sediment, growth of deltas and oceanic plains. Consolidation and metamorphosis. Origin of table-lands, mountain-chains, hills and valleys.

6. Historical sketch of the development of the British Islands, embracing a series of restorations of their general outlines, faunæ and floræ, as these existed in past times. The Laurentian rocks of Canada and their British equivalents. Cambrian formation: theory of slaty cleavage; contemporaneous volcanic action. Silurian formation: the district of Tortworth. Old Red Sandstone period: an account of the great lake-deposits of Wales and Scotland. Carboniferous formation: its relations to the underlying Devonian strata: the formation of coal and the duration of our coal supply. Permian formation: the crust movements and denudation which preceded it. Theory of mineral veins. Trias formation: origin of rock salt and gypsum; the East to West folding of the British Isles. Rhætic beds: Fish remains of Aust cliff; contemporaneous deposits of the Continent. Jurassic period: Australian affinities of its forms of life, distribution of coral reefs. Neocomian period: the delta of the Weald; palæozoic axis of London and Harwich. Cretaceous period: origin of chalk, greensand, flints and coprolites. Eocene period: London and Hampshire basins, deposits of Bovey Tracy; volcanic action on the shores of North-west Britain; tropical climate of the Northern temperate regions and amelioration of arctic conditions. Miocene: plant remains, discoveries of Professor Heer, subtropical climate of temperate regions. Pliocene: subappenine beds of Italy, cold climate of England. Glacial deposits: period of confluent glaciers, of submergence, of valley glaciers. Prehistoric man: his habitations, implements and mode of life; contemporaneous mammalian fauna. A general sketch of the Evolution of the Earth.

Text-books.—Green's *Geology for Students;* Jukes' *Manual of Geology; Traité de Géologie,* Lapparent; *Elemente der Géologie,* Credner; *Syllabus of Lectures on Geology* (Sollas). References to works treating of special branches of the subject will be given during the lectures.

Practical Work.

Facilities will be afforded for the practical study of rocks and fossils.

Excursions.

Excursions to illustrate the subjects of the lectures and to gain an insight into the principles of geological surveying will be made at intervals to places of interest in the neighbourhood.

Fee, £4 4s. for two Terms; £3 3s. for one Term.

LITHOLOGY.

Professor, W. J. Sollas, M.A.

Monday and Wednesday, 11—1.

This course will be given during the third Term only.

Syllabus.

1. The characters of the chief rock-forming minerals.

2. The structure and origin of the most important kinds of Rock, including Sand and Sandstone, Clay and Slate, Limestone, Granite, Syenite, Diorite, Basalt and Serpentine. The various causes of decay in rocks, and the means to be taken for their preservation. The selection of building stones.

3. A brief account will be added of the chief facts of Petrology. The structure and arrangement of rock-masses; lines of stratification, joints, cleavage, faults. The construction of Geological Maps.

Each class will commence with a lecture or demonstration, which will be followed by practical work in the laboratory. In this way the powers of observation and reasoning will be cultivated together, and a real knowledge of facts and principles ensured.

Field Practice.

The class will occasionally take short journeys into the country in order to study practically the methods of geological surveying.

Fee, £3 3s. Fee for the classes on Geology and Lithology combined, £6 6s.

PALÆONTOLOGY.

Professor, W. J. Sollas, M.A.

Tuesday and Thursday, 10—11.

This course will be given during the first and second Terms.

Syllabus.

The various processes by which organic remains are preserved in stratified deposits. The doctrine of "continuity," and the imperfection of the geological record. The application of palæontological data to geological problems. An account of the structure and affinities, classification and distribution of the more important kinds of fossil animals and plants.

The teaching will generally take the form of practical demonstrations.

Fee, £4 4s. for two Terms, £3 3s. for one Term.

BIOLOGY.

Professor, W. J. Sollas, M.A.

Monday, Wednesday and Friday, 2.30—5.

This course will be given in the first Term only.

Syllabus.

The morphology and physiology of typical forms of life.

Typical Plants.—*Protococcus* and *Saccharomyces* (yeast), *Penicillium* and *Mucor* (moulds), *Chara* or *Nitella*, a fern and flowering plant.

TYPICAL ANIMALS.—*Amœba, Vorticella, Hydra,* Earthworm, Leech, Mussel, Snail, Lobster or Crayfish, Cockroach, Frog.

A lecture will be given at the commencement of each class on one or more of the foregoing "types," specimens of which will then be given to the students for dissection and microscopical examination. The object of this course is to impart an accurate and practical knowledge of the nature of common living things. The instruction covers the subjects required for the Intermediate Examination in Science of the University of London.

Students beginning the study of Zoology are advised to commence it with this course.

Text-book.—*Elementary Instruction in Practical Biology* (Huxley and Martin.)

Fee, £3 3s.

Students in this class will be required to defray the expense of materials used.

ZOOLOGY.—I.

Professor, W. J. SOLLAS, M.A.

Wednesday and Friday, 2.30—5.

SYLLABUS.

A practical and theoretical study of the following typical animal forms: *Amœba, Paramecium, Hydra,* Earthworm, Leech, Mussel, Snail, Crayfish, Cockroach, Frog and Rabbit.

Text-books.—*Elementary Instruction in Practical Biology* (Huxley and Martin); *A Course of Practical Physiology* (Foster and Langley); *Die Anatomie des Kaninchens* (Krause).

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Terms singly; £2 2s. for the third Term.

This course covers the subjects required for the Preliminary Scientific (M.B.) Examination of the University of London.

Students in this class will be required to defray the expense of materials used.

COMPARATIVE ANATOMY.

Professor, W. J. Sollas, M.A.

Monday and Friday, 2.30—5; Thursday, 4—5.

This course will be given during the first Term only.

On Monday and Friday the instruction will be the same as that given in Zoology; on Thursday the Morphology of the Vertebrata, with special reference to their Osteology will be studied.

Text-books.—*Elementary Instruction in Practical Biology* (Huxley and Martin); *The Anatomy of Vertebrate Animals* (Huxley).

Fee, £4 4s.

This course is intended to meet the requirements of students preparing for the Fellowship Examination of the Royal College of Surgeons.

ZOOLOGY.—II. POND LIFE.

Professor, W. J. Sollas, M.A.

Tuesday and Thursday, 10—12.

The object of this course is to impart a scientific and practical knowledge of the various kinds of fresh water animals found in the neighbourhood of Bristol. The Protozoa, Spongiæ, Hydrozoa, Polyzoa, Mollusca, Platyhelminthes, Annelida, Rotifera, and Crustacea will be especially studied. The course will include instruction in the use of the microscope, the preparation and mounting of microscopic objects, and in the modern methods of Zoological investigation. Excursions for the observation and collection of animals will be made occasionally to the ponds of the neighbourhood.

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Term singly; £2 2s. for the third Term.

Students who are preparing for the examinations in Zoology of the University of London with a view to

taking degrees in Natural Science are recommended to consult with the Professor.

BIOLOGICAL LABORATORY.

Professor, W. J. Sollas, M.A.

The Biological Laboratory is open daily from 10—4, except on Saturday, when it closes at 1 o'clock.

A course of practical instruction in the methods of biological research, and on the structure of the leading animal types will be conducted under the supervision of the Professor.

A class will be formed to undertake the original investigation of some special subject or the complete study of some small group of animals.

Arrangements are made for obtaining such specimens as are not preserved in the pond, tanks, or cages of the Laboratory.

Students will find it convenient to provide themselves with a microscope of their own; good working instruments can now be obtained at comparatively small cost; but it would be advisable for students to consult the Professor before purchasing, as the value of a microscope depends greatly upon the maker. A fee of 10/- a Term will be charged for the use of a College microscope. Each student is expected to be provided with a set of the necessary dissecting apparatus, which can be obtained at Messrs. Ferris and Co.'s for 8/6.

Fee, for the Session, £8 8s.; for each Term, £3 3s.

BOTANY.

Lecturer, Adolph Leipner.

Monday, Wednesday and Friday, 2—3.

This course will be given during the second and third Terms, so as to include the most active season of plant-life.

The Botanical Garden, which has been recently formed, attached to the College, contains upwards of 1,000 specimens illustrating the different orders, and being at all times accessible to students gives every opportunity for illustration and study.

Syllabus.

The structure of the Cell. Chemical and physical properties of Protoplasm. Nature and mode of origin of Cell-sap, Chlorophyll, Starch and Aleurone grains, Raphides. Chemical and physical properties and growth of Cell-wall. Formation of Cells. Differentiation of Primitive tissues into Epidermal, Fibro-vascular and Fundamental tissues. The materials of plant food; the organs by which they are absorbed. The movements of water and gases in plants. Assimilation and Metastasis. Respiration. Influence of light and temperature upon plants. Growth, Heliotropism, Geotropism, twining of stems and tendrils. Irritability. General phenomena of asexual and sexual reproduction. Causes of variation.

The points of structure, development and reproduction which essentially characterize the following groups of Plants:—*Cryptogams:* Oscillatoriaceæ, Palmellaceæ, Schizomycetes, Saccharomycetes, Confervaceæ, Myxomycetes, Conjugatæ, Mucorinæ, Volvocineæ, Peronosporeæ, Fucaceæ, Floridæ, Characeæ, Ascomycetes, Lichenes, Basidiomycetes, Hepaticæ, Musci, Filices, Rhizocarpæ, Equisetaceæ, Lycopodaceæ. *Gymnosperms*: Coniferæ, Cycadaceæ. *Angiosperms:* Gramineæ, Cyperaceaæ, Liliaceæ, Orchidaceæ, Amentaceæ, Primulaceæ, Labiatæ, Solanaceæ, Scrophulariaceæ, Compositæ, Umbelliferæ, Rosaceæ, Leguminosæ, Malvaceæ, Violaceæ, Caryophyllaceæ, Cruciferæ, Ranunculaceæ.

Description in technical language of specimens of flowering plants.

Text-books.—*Text-book of Botany*, by Prantl and Vines; Sach's *Text-book of Botany*. For fieldwork—Hooker's *Students' Flora of the British Islands*, or Babington's *Manual of English Botany*.

Fee, £4 4s. for two Terms; £3 3s. for the second Term only; £2 2s. for the third Term only.

POLITICAL ECONOMY.

Elementary Course.

Lecturer, Mary Paley Marshall.

Syllabus.

National wealth, its material, mental and moral elements. Expenditure, the use and abuse of luxury. Organization of industry. Growth of population and of capital.

The theory of value; the causes which determine rent, prices, wages and profits. The theory of money; Banking, Alternations of general prosperity and depression. Foreign trade.

Monopolies and combinations. Trades Unions, their history and their influence on wages. Co-operation, the connection between occupation and character. Aims and methods of public and private poor relief.

The principles of taxation. English taxes and their effects on the various classes of the community. The method of political economy and its relation to other branches of social science.

These lectures will be given on Wednesdays and Fridays from 12 to 1 throughout the three Terms.

Text-books.—Marshall's *Economics of Industry;* Mill's *Political Economy.* The following also may be read:—Cairnes' *Logical Method of Political Economy;* Walker's *Wages Question;* Jevons *On Money.*

Advanced Course.

Professor, A. Marshall, M.A.

Lecturer, Mary Paley Marshall.

This Course will be given on Mondays and Wednesdays throughout the three Terms from 11—12.

Some of the subjects of the elementary course will be treated more fully, and in particular the

history and the practical applications of the science will be discussed at greater length.

The instruction on Mondays will be given by Professor Marshall, that on Wednesdays will be given by Mrs. Marshall and will relate chiefly to Adam Smith's *Wealth of Nations*.

Text-books.—Adam Smith's *Wealth of Nations;* Mill's *Political Economy*. The following also may be read:—Ricardo's *Principles of Political Economy*; Bagehot's *Lombard Street;* Goschen's *Foreign Exchanges;* Fawcett's *Protection and Free Trade;* Leone Levi's *History of English Commerce*.

Fee for either course, £4 4s. for three Terms; £3 3s. for two consecutive Terms; £2 2s. for any single Term.

MORAL PHILOSOPHY.

Professor, R. FANSHAWE, M.A.

Tuesday and Thursday, 10—11.

Utilitarianism and the Ethics of Evolution.

The following books will be systemically studied: *Bentham*, Theory of Morals and Legislation; *Paley*, Moral and Political Philosophy; *Mill*, Utilitarianism; *H. Sidgwick*, Methods of Ethics; *H. Spencer*, Data of Ethics; *L. Stephen*, Science of Ethics.

This course will be given during the first and second Terms.

Fee, £4 4s. for two Terms; £3 3s. for one Term.

*MODERN HISTORY.

Professor, J. ROWLEY, M.A.

The Professor of Modern History will lecture twice a week during each of the three Terms of the Session 1882-83. He will also hold two classes in each week. These classes are intended to be supplementary to the lectures; it is sought through them to give students an opportunity of acquainting themselves with particular passages of history as these are described in the works of the best accessible

* See Note, p. 44.

writers on the subject. Examinations may be held from time to time during the Term, in addition to those specified in the calendar.

The subject for the first and second Terms will be the History of England from the accession of the House of Hanover to the end of the American War of Independence. The subject for the third Term will be the French Revolution.

The lectures will be given on Tuesdays and Thursdays from 11 to 12. The classes will be held on Mondays and Wednesdays from 11 to 12.

Hand-book.—Mr. Franck Bright's *History of England.*

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for either the first or second Term; £2 2s. for third Term.

*ENGLISH LITERATURE.

Professor, J. Rowley, M.A.

The Professor of English Literature will lecture twice a week during the first and second Terms of the Session 1882-83. He will also hold two classes in each week during all three Terms. In these classes he will read with those of the students who desire to do so the more remarkable literary works produced during the period which forms the subject of his lectures. Examinations may be held occasionally in Term in addition to those specified in the calendar.

The subject for the first and second Terms will be English Literature from the birth of Chaucer to the death of Shakespeare.

The lectures will be given on Tuesdays and Thursdays from 12 to 1; the classes will be held on Mondays and Wednesdays from 12 to 1.

* Note.—Special instruction, beginning on the first Tuesday in November, in the subjects of Group A or of Group H of the Cambridge Higher Local Examination, or in those of the English Honour Section of the Oxford Examination for Women, will be offered to students of these Classes, and to such other students of the College as may satisfy the requirements of the Professor. The fee for this instruction is £4 4s.

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for either the first or second Term; £1 11s. 6d. for third Term.

*GREEK.

Professor, R. FANSHAWE, M.A.

There will be an Elementary and an Advanced Class in Greek, of which the first will meet on Tuesdays, Thursdays and Saturdays at 12, and the second on Mondays, Wednesdays and Fridays at 4.

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Term singly; £2 2s. for the third Term.

*LATIN.

Professor, R. FANSHAWE, M.A.

There will be an Elementary and an Advanced Class in Latin, of which the first will meet on Tuesdays, Thursdays and Saturdays at 11, and the second on Mondays, Wednesdays and Fridays at 3.

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Term singly; £2 2s. for the third Term.

HEBREW.

Lecturer, BERNHARD HEYMANN.

A class for beginners on Grammar and Translation will be held on Wednesdays and Fridays, from 2.30 to 3.30.

Instruction will be given to advanced students on Wednesdays and Fridays, from 3.30 to 4.30. The Book of Genesis will be read, and occasional

* NOTE.—The authors read in Greek and Latin will be chosen with reference to the wants of students of the College who present themselves. Special provision will be made for candidates for the London University Examinations, the Oxford Examination for Women, and the Cambridge Higher Local Examination.

lectures will be given on Grammar and the earlier commentators.

Fee for either course, £3 3s.

Text-books may be obtained at the Registrar's office.

FRENCH LANGUAGE AND LITERATURE.

Lecturer, EUGÈNE PELLISSIER, M.A., LL.B., B.Sc.

Instruction will be given in the French Language and Literature every Tuesday, Thursday and Friday. Advanced Class from 2.30 to 3.30. Elementary Class from 3.30 to 4.30.

In the Advanced Class lectures on French literature from A.D. 1650 to 1700 will be delivered in French every Friday.

Fee for each course, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Term singly; £2 2s. for the third Term.

Text-books. — Advanced Class: Brachet's *French Grammar* (Hachette's English edition); *The graduated course of translation, Part II., Senior Course*, Cassal and Karcher; Corneille, *Le Cid* (Macmillan's *Foreign Classics*); La Bruyère, *Les Caracteres* (Hachette).

Elementary Class: Brachet's *Elementary French Grammar* (Hachette's English edition); *The graduated course of translation, Part I., Junior Course*, Cassal and Karcher; *Le Directoire* (Pitt Press Series).

Those who wish to enter for the Cambridge Higher Local Examination will be directed in their studies of the books recommended for it, especially Brachet, *Historical French Grammar*, and Geruzez, *Histoire de la Littérature Française*.

GERMAN LANGUAGE AND LITERATURE.

Lecturer, ADOLPH LEIPNER.

Instruction will be given in the German Language and Literature every Monday, Wednesday and Friday. Elementary Class from 3 to 4. Advanced Class from 4 to 5.

In the Advanced Class occasional lectures on some Authors or a period of German Literature will be delivered in German.

Fee, £5 5s. for three Terms; £4 4s. for two consecutive Terms; £3 3s. for the first or second Term singly; £2 2s. for the third Term.

Text-books.—For the Advanced Class: *German Studies* by H. Plate, Part II. (Dresden, Louis Ehlermann); Goethe's *Wahrheit and Dichtung.*

For the Elementary Class: *German Studies* by H. Plate, Part I. (Dresden, Louis Ehlermann). Schiller's *Gedichte.*

Those who wish to enter for the Cambridge Higher Local Examination will be directed in their studies of the books recommended, especially *Eve*, short German Syntax; *Gostwick and Harrison*, outline of German Literature; *Vilmar*, Geschichte der deutschen National-litteratur; *Gelbe*, Deutschen Sprachlehre; *Roquette*, Geschichte der Deutschen Dichtung.

GENERAL TIME TABLE OF DAY CLASSES.

	Monday	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
CHEMISTRY—Inorganic .. .. .. (a)	9	—	9	—	9	9
" Organic .. .. .. (f)	—	9	—	9	—	9
" Advanced Course .. (a)	—	—	—	—	—	9
" Laboratory Instruction	10 to 5	10 to 5	10 to 5	10 to 5	10 to 5	10 to 1
" " Special Course (a)	—	4 to 6	—	4 to 6	—	—
MATHEMATICS—Elementary, Div. I.	*11	—	*11	—	*11	—
" " Div. II.	*12	—	*12	—	*12	—
" " Div. III.	—	*10	—	*10	—	*10
" Advanced	*10	—	*10	—	*10	—
EXPERIMENTAL PHYSICS—						
Elementary	11	—	*10 & *11	—	11	—
Advanced .. .. (a)	—	—	†2	—	†2	—
Laboratory Instruction	10 to 5	10 to 5	—	10 to 5	10 to 5	—
NATURAL PHILOSOPHY	†12	—	†12	—	—	—
ENGINEERING—1st year	10	—	10	—	10	—
" 2nd year	—	11	—	11	—	11
" 3rd year .. .. (a)	12	—	12	—	12	—
GEOMETRICAL DRAWING .. .. (a)	—	*2 to 4	—	*2 to 4	—	—
ENGINEERING DRAWING AND MACHINE DESIGNING (a)	*2 to 4	—	*2 to 4	—	*2 to 4	—
SURVEYING—Elementary .. .. (e)	—	2 to 5	—	2 to 4	—	—
" Advanced .. .. (e)	—	—	2 to 4	—	2 to 4	—
GEOLOGY .. .. (a)	11	—	11	—	11	—
LITHOLOGY .. .. (e)	†11 to 1	—	†11 to 1	—	—	—
PALÆONTOLOGY .. .. (a)	—	†10	—	†10	—	—
BIOLOGY .. .. (b)	†2 30 to 5	—	†2 30 to 5	—	†2 30 to 5	—
ZOOLOGY, I.	—	—	†2 30 to 5	—	†2 30 to 5	—
COMPARATIVE ANATOMY .. .. (b)	†2 30 to 5	—	—	4	†2 30 to 5	—
ZOOLOGY, II.—Pond Life	—	†10 to 12	—	†10 to 12	—	—
BIOLOGY—Laboratory Instruction ..	10 to 4	10 to 4	10 to 4	10 to 4	10 to 4	10 to 1
BOTANY .. .. (c)	†2	—	†2	—	†2	—
POLITICAL ECONOMY—Elementary ..	—	—	†12	—	†12	—
Advanced ..	†11	—	†11	—	—	—
MORAL PHILOSOPHY .. .. .. (a)	—	10	—	10	—	—
MODERN HISTORY	*11	11	*11	11	—	—
ENGLISH LITERATURE .. .. .. (g)	*12	12	*12	12	—	—
GREEK—Elementary	—	*12	—	*12	—	*12
Advanced	*4	—	*4	—	*4	—
LATIN—Elementary	—	*11	—	*11	—	*11
Advanced	*3	—	*3	—	*3	—
HEBREW—Elementary	—	—	*2.30	—	*2.30	—
Advanced	—	—	3.30	—	†3.30	—
FRENCH—Elementary	—	*3.30	—	*3.30	*3.30	—
Advanced	—	*2 30	—	*2.30	2.30	—
GERMAN—Elementary	*3	—	*3	—	*3	—
Advanced	*4	—	*4	—	*4	—

The instruction in the hours which are marked with * will take the form of class teaching.

The instruction in the hours which are marked with † will in some part take the form of class teaching.

(*a*) During the first and second Terms ; (*b*) during the first Term only ; (*c*) during the second and third Terms only ; (*d*) during the second Term only ; (*e*) during the third Term only ; (*f*) on Tuesdays and Thursdays during the second Term ; on Tuesdays, Thursdays and Saturdays during the third Term ; (*g*) only classes in the third Term.

SESSION 1881—82.

LIST OF SCHOLARS.

Chemical Scholarship:—
Joseph A. Leon.

First General Scholarship:—
Louisa M. Smith.

Second General Scholarship:—
Charles G. Hampton.

Second Catherine Winkworth Scholarship:—
Clara Case.

The Third General Scholarship and the First Catherine Winkworth Scholarship were not awarded.

EXAMINATIONS OF DAY CLASSES.

LIST OF HONOURS.

INORGANIC CHEMISTRY.

First Term:—
Frederick C. Tothill,
Arthur H. Joseph.

MATHEMATICS.

ELEMENTARY.

Second Term—Division I.:—
Caroline Sturge,
David M. Davies,
George H. Barker.

Division II.:—
Henry W. Williams,
Mary E. I. Pocock,
William H. Mason,
Mary Williams.

Division III.:—
George Eaves,
Edith M. Clarke,
Stephen S. Thomas,
Ellen M. Leonard,
Edward Lovell.

ADVANCED.

Second Term—Division II.—
Amy K. Cooper.

THEORETICAL MECHANICS.

Second Term—Division II.:—
Henry W. Williams.

ENGINEERING.

SECOND AND THIRD YEAR COURSES—THEORY OF STRUCTURES.

First Term:—
A. Marshall Hunt,
Arthur Birkett,
J. F. Gerald FitzGerald,
William H. Mason.

Second Term:—

FIRST YEAR COURSE.

George F. Fry,
George W. Warry,
George E. J. McMurtrie.

SECOND AND THIRD YEAR COURSES—MECHANISM AND STRUCTURES.

Second Term:—
A. Marshall Hunt,
J. F. Gerald FitzGerald,
Henry W. Williams,
William H. Mason.

EXPERIMENTAL PHYSICS.

ELEMENTARY.

First Term:—
Louisa M. Smith,
J. F. Gerald FitzGerald,
George H. Barker.

Second Term:—
Louisa M. Smith,
George H. Barker,
J. F. Gerald FitzGerald.

ADVANCED.

First Term:—
Joseph A. Leon.

GEOMETRICAL DRAWING.

ADVANCED.

First Term:—
Henry W. Williams.

MACHINE DRAWING.

Second Term:—

FIRST YEAR.

George F. Fry.

THIRD YEAR.

Maurice Taylor,
Arthur W. Metcalfe.

SURVEYING.

Second Term:—

William H. Mason,
A. Marshall Hunt.

GEOLOGY.

First Term:—

Maria H. Fox,
Arthur Birkett,
Franklen P. Evans,
Arthur W. Metcalfe,
Joseph A. Leon.

Second Term:—

Franklen P. Evans,
Maria H. Fox.

ZOOLOGY.

First Term:—

Franklen P. Evans.

Second Term:—

Franklen P. Evans.

PALÆONTOLOGY.

First Term:—

Margaret Ogilvie.

Second Term:—

Margaret Ogilvie.

POLITICAL ECONOMY.

Second Term:—

ELEMENTARY.

Mary I. Ogilvie,
Frank Merrick.

ADVANCED.

Edith C. Wilson,
Florence O'Brien,
Amy E. Bell.

MODERN HISTORY.

First Term:—
Josephine M. W. Williams,
Alice Jenner,
Hiatt C. Baker,
David M. Davies.

Second Term:—
Alice Jenner,
Josephine M. W. Williams,
Amy K. Cooper,
Alice Ritson,
Henrietta Whitwell.

ENGLISH LITERATURE.

First Term:—
Mary I. Ogilvie,
Constance O'Brien,
Margaret Ogilvie,
Henrietta O. Robinson.

Second Term:—
Constance O'Brien,
Mary I. Ogilvie,
Margaret Ogilvie,
Meta Garnett.

GREEK.

Elementary.

First Term—Division I.:—
Stephen S. Thomas.

Division II.:—
Maria H. Fox.

Second Term—Division I.:—
Maria H. Fox.

Advanced.

Second Term:—
Evan Morgan.

LATIN.

Elementary.

First Term—Division II.:—
John H. Jones,
George F. Owen.

FRENCH.

Advanced.

Second Term:—
Clara Case,
Edith B. Warren,
Mary D. Warren.

GERMAN.

First Term :—

ELEMENTARY.

Maria H. Fox,
Clara Case.

ADVANCED.

Marion E. Shaw,
Louisa M. Smith.

The list of Honours obtained in the Examinations at the end of the third Term will be found in tho Appendix.

EVENING LECTURES.

GENERAL REGULATIONS.

(1.) Each student on admission must sign an undertaking to observe all the regulations affecting students made by the Council of the College for the time being.

(2.) The Registrar and Secretary will attend at his office, for the purpose of admitting students, from 6.45 to 8.15 p.m., from October 9th to October 20th, 1882, January 15th to January 24th, and from April 26th to May 2nd, 1883, except on Saturdays.

(3.) The tickets of admission issued by the Registrar and Secretary must be presented to the Professors and Lecturers for insertion of the student's name in the class lists.

(4.) A record will be kept of the attendance of students. A report of the attendance of any student will be periodically sent to his parents or guardians if they require it.

(5.) Students will be required to pay an entrance fee of 1/- per class, or a composition fee of 3/- for three or more classes during one Session, to be paid in addition to the ordinary course fees.

(6.) Disorderly conduct on the part of any student will be reported to the Principal, who will adopt such action thereon as he may deem necessary.

FEES.

The Fees are as a rule:—For courses in which two hours of instruction are given in the week, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term.

Any exceptions to this rule will be found in the accounts given further on of the subjects of the several courses.

Evening Lectures.

SUBJECTS OF INSTRUCTION.

CHEMISTRY.

Lecturer, SYDNEY YOUNG, D.Sc.

Wednesday and Friday, 8—9.

This course consists of two lectures a week during the first and second Terms. The subject includes the general principles of Chemistry and Chemical Physics and the Chemistry of the non-metallic Elements. A few lectures at the end of the course will be devoted to the consideration of the Chemistry of the Metals. Special attention will be paid throughout to those products which have a practical application in the arts and manufactures. The lectures will be illustrated with experiments and diagrams. Examinations will be held from time to time during the course.

SYLLABUS.

PRINCIPLES OF CHEMISTRY AND CHEMICAL PHYSICS.—Various kinds of matter. Mixtures, compounds and elements. Separation of mixtures. Solution, crystallization, distillation, dialysis, diffusion. Atomic theory. Molecular theory of gases. Laws of Boyle and Gay-Lussac. Avogadro's hypothesis. Analysis and synthesis of compounds. Laws of combination. Quantivalence. Heat of combination. Methods of determining atomic weight.

THE NON-METALLIC ELEMENTS.—*Oxygen:* Occurrence, preparation and properties; Combustion; Respiration; the Atmosphere. *Hydrogen:* Water; Acids, bases and salts. *Chlorine, Bromine, Iodine* and *Fluorine:* Hydrochloric Acid; Compounds with Oxygen; Bleaching. *Nitrogen:* Ammonia: Oxides

of Nitrogen; Manufacture of Nitric Acid. *Carbon:* Carbonic Acid; Fire-damp; Ventilation; Illumination; Manufacture of Coal-Gas. *Sulphur, Selenium,* and *Tellurium:* Sulphuric Acid Manufacture. *Phosphorus:* Lucifer Matches; Manures. *Boron* and *Silicon:* Glass and Earthenware; Mortar and Cements; Building materials. *Arsenic* and *Antimony:* Detection in poisoning cases; Arsenical Dyes.

THE METALS.—General properties, physical and chemical; Classification; the special properties and methods of preparation of the more important metals, such as Iron and Copper.

Fee, 10/6 for two Terms; 7/- for one Term.

TECHNICAL CHEMISTRY.

SPECIAL COURSES.

Professor, W. RAMSAY, Ph.D.

First Term.—A course of lectures will be delivered on Thursday evenings at 8 o'clock, on FUEL, and on the METALLURGY of IRON and STEEL.

Second Term.—A course of lectures will be delivered on Thursday evenings at 8 o'clock, on WOOL, SILK, COTTON, LINEN and JUTE. This course is designed to afford information to those engaged in the manufacture and sale of articles made of the above materials. It will imply no previous knowledge of chemistry; but those who purpose to attend it are recommended to enter the Evening Chemistry Classes during the first Term.

Fee, 10/6 for two Terms; 7/- for one Term.

EXCURSIONS.

In order that students may have an opportunity of acquiring some knowledge of applied Chemistry, excursions to some of the mines and manufactories of the neighbourhood will occasionally be made.

They will be conducted by the Professor or Lecturer. Past or present students of the College desirous of taking part in these excursions are invited to apply to the Professor of Chemistry.

MATHEMATICS.

Lecturer, EDWARD BUCK, B.A.

Monday and Wednesday, 7—9.

Elementary Mathematics.—Arithmetic, Euclid, Algebra and Trigonometry.

Advanced Mathematics.—Conic Sections, Spherical Trigonometry and Differential Calculus.

Students in these classes may attend either on Mondays or Wednesdays.

Fee for the class in Elementary Mathematics, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term; for the class in Advanced Mathematics, 30/- for three Terms; 25/- for two consecutive Terms; 20/- for one Term.

HEAT AND LIGHT.

Professor, SILVANUS P. THOMPSON, D.Sc., B.A.

Demonstrator, C. C. STARLING.

During the first and second Terms a course of twenty lectures will be delivered on Heat and Light, on Tuesdays, from 7 to 8 o'clock. Exercise classes will be held on Thursday evenings from 8—9 p.m. Students attending the exercise classes are expected to take home problems to work.

SYLLABUS.

Heat.—Measurement of Temperatures, of Expansion by Heat, of Quantities of Heat. Thermometers and Pyrometers. The Air Thermometer. Calorimeters. Specific Heat. Latent or Potential Heat. The Phenomena of Fusion, Evaporation, Ebullition,

Condensation and Crystallisation. Convection of Heat; Theory of Heating Apparatus and of Ventilation. Oceanic Currents. Conduction of Heat: the Safety Lamp. Radiation of Heat: Power of bodies to Transmit, Absorb, Reflect and Emit Rays of Heat. The Transformations of Heat: Relation of Heat to the motion of Matter; Relation of Heat to the motion of Electricity. The Elements of Thermodynamics. Heat-Engines.

Light.—The simple Laws of Optics. Velocity and Intensity of Light.

Geometrical Optics.—Mirrors, Lenses, Telescopes and Microscopes. Laws of Reflexion and Refraction of Light.

Physical Optics.—Dispersion of Light. The Spectroscope. Phosphorescence and Fluorescence. The Wave Theory of Light. Phenomena of Interference and Diffraction. Double Refraction and Polarisation of Light.

Physiological Optics.—The Eye and its Optical Adjustments. Optical Illusions.

Fee, 10/6 for two Terms; 7/- for one Term.

Text-book.—Deschanel's *Natural Philosophy*, Vols. II. and IV. only (Blackie and Son).

ELECTRICITY AND MAGNETISM.

Professor, SILVANUS P. THOMPSON, D.Sc., B.A.

Demonstrator, C. C. STARLING.

During the first and second Terms a course of twenty lectures will be delivered on Electricity and Magnetism, on Thursday evenings, from 7 to 8 o'clock. Exercise classes for working problems on the lectures will be held on Tuesday evenings from 8 to 9 o'clock.

SYLLABUS.

Frictional Electricity.—Electrical Machines. Electroscopes. Induction. Leyden Jars and other Condensers. Electrometers.

Magnetism.—Magnets, Natural and Artificial. Laws of Magnetic Force. The Compass and the Dipping Needle.

Current Electricity.—The Voltaic Cell. Batteries. Laws of Electromotive Force and of Resistance. Chemical Actions of the Current. Magnetic Actions of the Current. Electromagnets. Heating effects of the Current. Induction Currents.

Telegraphs and Telephones.—Principles of Construction and use of Telegraphic and Telephonic Instruments.

Electric Lighting.—Construction of Dynamo-electric Machines for Generating Electric Currents. Electric Lamps. The Voltaic Arc. Incandescent Lights.

Distribution and Storage of Electric Energy.—Systems of Distribution. Accumulators or Storage Batteries. Electric Motors or Engines. Electric Railways.

Fee, 10/6 for two Terms; 7/- for one Term.

Text-book.—S. P. Thompson's *Electricity and Magnetism* (Macmillan and Co.)

ELECTRICAL LABORATORY WORK.

Professor, SILVANUS P. THOMPSON, D.Sc., BA.

Demonstrator, C. C. STARLING.

Systematic instruction in the Electric Laboratory will be given on Wednesday evenings from 7 to 9 p.m., by the Professor and his Demonstrator.

There will be two courses. An elementary one for junior students, and an advanced course for those already accustomed to electrical experimenting.

Elementary Laboratory Course.—Construction of simple apparatus. Electroscopes, Leyden Jars, Induction Apparatus, &c. Mode of measuring Quantity and Density of Charge, Insulation and Inductive

Capacity. Use of Electric Machines. Management of Voltaic Batteries. Construction and use of Galvanometers. Experiments with Batteries, Induction Coils, Telegraphic and Telephonic Apparatus.

Students attending this course will be taught how to make various pieces of apparatus for themselves, and they will be expected to furnish the materials at their own expense, which will not exceed a few shillings; such apparatus remaining as their own property.

Advanced Laboratory Course.—Measurement of Resistance, Electromotive Force, &c. Use of Resistance Coils, Wheatstone's Bridge, Galvanometer and Electro-dynamometer. Use of Condensers. Construction and use of Dynamo-electric Machines. Management of Electric Arc Lights and Incandescent Lamps. Measurement of Currents employed in Electric Lighting. Tests of Efficiency of Machinery and Lamps.

Fee, for two Terms, £1 11s. 6d.; for one Term, £1 1s.

APPLIED MECHANICS AND STEAM.

Professor, H. S. Hele Shaw.

Friday, Lecture, 7—8; Class, 8—9.

These lectures will cover the ground of the examinations of the Science and Art Department in the corresponding subjects.

(1) Nature and scope of Applied Mechanics. Definition of a Machine. Elements of Pure Mechanism.

(2) Use of Graphic Methods. Stress and Strain. The Form of Beams, Girders, Roofs, and Bridges.

(3) Properties of Materials used in Construction —Wood, Iron, Steel, and other Metals and Stone.

(4) The Principle of Work and its Application to Simple Machines.

(5) The Experimental Study of the Laws of Friction, and its effect on Simple Machines. Contrivances for Utilizing and also those for Lessening Friction.

(6) The Laws of Force and Motion: Theory of the Fly Wheel, Fly Press, Fly Presses, Pile Driver, Ballistic Pendulum, &c.

(7) Sources of Energy in Nature.

(8) Water Power: Hydraulic Presses and Engines, Pumps.

(9) Wind Power, Windmills. Ventilating Fans. Cold Air Machines.

(10) Steam, Hot Air and Gas Engines.

A paper of questions on the subject of the lecture will be given in the class every week, to be worked out with the help of the lecturer.

Fee, for two Terms, 10/6; for one Term, 7/-

GEOMETRICAL DRAWING.

Professor, H. S. HELE SHAW.

Wednesday, 7—8.

A course of twenty lessons in Practical Plane and Solid Geometry will be given during the first and second Terms.

Plane Geometry.—The Construction of Scales. The Construction of Simple Figures. The Combination of Figures. The Transformation of Figures and Areas.

Solid Geometry.—Projections of Points and Lines. Traces of Lines and Surfaces. Projection of Simple Solid Forms. Sections and Penetration of Simple Solids. Developments of Surfaces of Simple Solids, and Drawing of Patterns and Templates for Boilers, &c.

Fee, for the course, together with that on Machine Design and Drawing, 10/6 for two Terms; 7/- for one Term.

MACHINE DESIGN AND DRAWING.

Professor, H. S. Hele Shaw.

Wednesday, 8—9.

A course of twenty lessons in Machine Drawing will be given during the first and second Terms.

The course of instruction will deal with the strength and form of Bolts and Nuts, Cotters, Shafting, Couplings, Cranks, Eccentrics, Pistons, Pedestals, Plummer Blocks and Bearings, Toothed and Belt Gearing, Valves of various kinds, Pipes, Pipe Joints, Glands, Air and Force Pumps, and the preparation of Tracings and Working and Finished Drawings of Engines generally.

Students in the Drawing Courses will also be expected to undertake exercises to be worked out during the week. They will be required to provide themselves with the necessary instruments.

Fee for the course, together with that on Geometrical Drawing, 10/6 for two Terms; 7/- for one Term.

GEOLOGY.

Professor, W. J. Sollas, M.A.

Wednesday and Friday, 8—9.

The first part of this course will be devoted to a consideration of the present condition of the Earth; and the second to using the information so gained in interpreting its past history.

Part I.—The general form and structure of the Earth. The Atmosphere. Wind and Rain. Rivers and Glaciers. The Ocean: its Tides and Currents. The North Atlantic Sea-floor. The Waste and Renovation of Continents. Volcanoes: their Life-history and Causation. Earthquakes. Movements in the Earth's Crust: the Raising of Land up from the Sea and its Depression beneath it. The State and Temperature of the Interior of the Earth.

PART II.—The Laurentian period: the oldest known Rocks and their supposed Fossils. Cambrain period: Slate and its origin. Silurian period: ancient Volcanoes. The Lakes of the old Red Sandstone. Carboniferous period: Coal and its origin. Permian and Trias: Salt Lakes and their products: Jurassic period: Coral Reefs and the Cotswold Hills. The Neocomian Continent: its River and the Delta of of the Weald. The axis of London and Harwich. Cretaceous period: how the Chalk grew; some results of the "Challenger" Expedition. Eocene and Miocene periods: Volcanoes of the Inner Hebrides. Pliocene period: first signs of the Ice-age. Glacial period: *mer de glace* of Scotland. Early English savages and their surviving descendants.

EXCURSIONS.

In the summer Term excursions will be made to various localities in the neighbourhood with the object of studying practically the more important formations.

Fee, 10/6 for two Terms; 7/- for one Term.

BOTANY.

Lecturer, ADOLPH LEIPNER.

An elementary course of lectures on Structural and Physiological Botany, and on the classification, technical description and identification of the wild plants of the neighbourhood will be given every Wednesday and Friday from 7 to 8, during the second and third Terms.

The Botanical Garden recently formed is at all times accessible to the students, and gives every opportunity for illustration and study.

Fee, 10/6 for two Terms; 7/- for one Term.

Text-books. — *Text-Book of Botany*, by Prantl and Vines; Hooker's *Students' Flora of the British Islands;* or Babington's *Manual of English Botany.*

POLITICAL ECONOMY.

Professor, A. MARSHALL, M.A.

Tuesdays, 7—9.

THE THEORY OF VALUE ILLUSTRATED BY THE ECONOMIC HISTORY OF ENGLAND DURING THE LAST HUNDRED YEARS. In this course an explanation will be given of the chief changes that have taken place in prices, wages and profits in England from the invention of the steam engine to the present time; and an inquiry will be made as to the influence which these changes have exerted on the sum total of human happiness.

The instruction given in the regular "classes" will be adapted to the wants of beginners. Some theoretical difficulties will be discussed with advanced students in extra classes which will be held from time to time as occasion requires.

The first lecture, which will be open to all, will be on "The Economic condition of England a hundred years ago." It will be given from 7 to 8 on Tuesday, October 10th.

Text-books.—Mill's *Political Economy;* Marshall's *Economics of Industry.* Consult also Leone Levi's *History of English Commerce.*

Fee, 10/6 for two Terms; 7/- for one Term.

MODERN HISTORY.

Professor, J. ROWLEY, M.A.

Tuesday, 7—9.

There will be one lecture and one class every week during the first and second Terms. The class will be continued in the third Term until June 12th. The subject for the next Session will be the History of England from 1625 to 1689.

There will be an examination at the end of the first and the second Term.

Fee, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term.

ENGLISH LITERATURE.

Professor, J. ROWLEY, MA.

Thursday, 7—9.

There will be one lecture and one class every week during the first and second Terms. In the third Term the class will be continued every Tuesday until June 12th. The subject for the next Session will be English Literature during the Elizabethan age.

The selected books of the first part of Group A of Cambridge University Higher Local Examination will be among the books read at class.

There will be an examination at the end of the first and second Term.

Fee, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term.

GREEK.

Professor, R. FANSHAWE, M.A.

Monday, 8—9, Wednesday and Friday, 7—8.

The work of these classes will be arranged in three divisions, Elementary (Wednesday), Middle (Friday), and Advanced (Monday); in each of which instruction will be given in Translation, Grammar and Composition. The authors to be read will be chosen in reference to the wants of the students who present themselves, special provision being made for candidates for the London University Examinations, the Oxford Examination for Women and the Cambridge Higher Local Examination. Students are entitled to attend *any two* divisions for a single fee.

Fee, 15/- for three Terms; 10/6 for two Terms 7/- for one Term.

LATIN.

Monday, 7—8, Wednesday and Friday, 8—9.

The same arrangements will be observed as in the Greek Classes. The Elementary Class will be held on Wednesdays, the Middle Class on Fridays, and the Advanced Class on Mondays.

Fee, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term.

FRENCH LANGUAGE AND LITERATURE.

Lecturer, EUGÈNE PELLISSIER, M.A., LL.B., B.Sc.

ELEMENTARY CLASS FOR MEN.—Monday, 7—9.

Accidence, regular and some irregular verbs—Exercises and Supplementary Exercises on Brachet's Elementary French Grammar (Hachette's edition)—Voltaire, Charles XII.—Hachette's edition (Gustave Masson, B.A.)

ADVANCED CLASS FOR MEN.—Thursday, 7—9.

Accidence and Syntax Brachet's Elementary French Grammar (Hachette's edition). The graduated course of translation Part I., Junior Course. Cassal and Karcher. Commercial Correspondence (A. Ragon). Mérimée, *Colomba* (Hachette's *Modern French Authors, Vol. XIV).*

Lecturer, A. D'OURSY, B.A.

ELEMENTARY CLASS FOR WOMEN.—Friday, 7—9.

1.—Exercises in Chardenal's First French Standard Course—Practice in Letter Writing.

2.—Translation in Chardenal's French Reader.

3.—Grammar. The whole of the Accidence, regular and most of the irregular verbs.

4. — Practice in French conversation, from D'Oursy's Dialogues raisonnés.

ADVANCED CLASS FOR WOMEN.—Tuesday, 7—9.

1.—Translation from French into English of French Classics; volume v., G. Masson. (Clarendon Press, Oxford.)

2.—Free translation from English into French, and Exercises on Syntax in D'Oursy's Grammar, Practice in Letter Writing. Composition by Cassal, part i.

3.—Lectures on French Literature.

Fee, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term.

GERMAN LANGUAGE AND LITERATURE.

Lecturer, ADOLPH LEIPNER.

Instruction will be given in the German Language and Literature every Wednesday and Friday from 8 to 9.

Fee, 15/- for three Terms; 10/6 for two Terms; 7/- for one Term.

Text-books.—Otto's *Conversational German Grammar.*; Schiller's *Jungfrau von Orleans.*

GENERAL TIME TABLE OF EVENING CLASSES.

	Monday	Tuesday.	Wednesday.	Thursday.	Friday.
CHEMISTRY .. .. (a)	—	—	8	—	8
" Technical .. .. .. (a)	—	—	—	8	—
MATHEMATICS .. .. (e)	*7 to 9	—	*7 to 9	—	—
HEAT AND LIGHT .. .. (a)	—	7	—	*8	—
ELECTRICITY AND MAGNETISM .. (a)	—	*8	—	7	—
Laboratory Instruction .. (a)	—	—	7 to 9	—	—
APPLIED MECHANICS AND STEAM (a)	—	—	—	—	7 to 9
GEOMETRICAL AND MACHINE DRAWING .. .. (a)	—	—	*7 to 9	—	—
GEOLOGY .. .. (a)	—	—	8	—	*8
BOTANY .. .. (c)	—	—	†7	—	†7
POLITICAL ECONOMY .. .. .. (a)	—	†7 to 9	—	—	—
MODERN HISTORY .. .. (a) (d)	—	7 & *8	—	—	—
ENGLISH LITERATURE .. .. (a) (d)	—	—	—	7 & *8	—
GREEK—					
Elementary	—	—	*7	—	—
Middle	—	—	—	—	*7
Advanced	*8	—	—	—	—
LATIN—					
Elementary	—	—	*8	—	—
Middle	—	—	—	—	*8
Advanced	*7	—	—	—	—
RENCH—					
(Men) Elementary	*7 to 9	—	—	—	—
" Advanced	—	—	—	*7 to 9	—
(Women) Elementary	—	—	—	—	*7 to 9
" Advanced	—	*7 to 9	—	—	—
RMAN	—	—	*8	—	*8

The instruction in the hours marked with * will take the form of class teaching.
The instruction in the hours marked with † will in some part take the form of class teaching.

(a) During the first and second Terms; (b) during the first Term only; (c) during the second and third Terms only; (d) these courses will be continued during the third Term by classes held from 7 to 8 and 8 to 9 respectively, on Tuesdays, until June the 12th; (e) Students in this class may attend either on Mondays or Wednesdays.

EXAMINATION OF EVENING CLASSES.

LIST OF HONOURS.

INORGANIC CHEMISTRY.

First Term :—
John Princep,
George H. Barker,
Joseph E. Moore.

Second Term :—
Joseph E. Moore,
John Princep.

MATHEMATICS.

ELEMENTARY.

Second Term—Division I. :—
Charles D. H. McMillan,
Arthur Leche,
J. F. Gerald FitzGerald.

Division III. :—
Emma Hulbert,
Susan Clinch,
Elizabeth Parnall,
Alice Jenner,
Alice Ritson,
Harriet E. Evans.

APPLIED MECHANICS AND STEAM.

Second Term :—
A. Marshall Hunt,
Charles H. Palmer.

GEOMETRICAL DRAWING.

Second Term :—
William H. Mason.

MACHINE DRAWING.

ADVANCED.

Second Term :—
J. F. Gerald FitzGerald,
Henry W. Williams.

POLITICAL ECONOMY.

Second Term:—

ELEMENTARY.

Mary Cole,
Hugh G. Marshall.

ADVANCED.

Blanche Whitmore,
William H. Hawkes.

MODERN HISTORY.

First Term:—

Alice Jenner,
Maria Mackenzie,
Edith C. Wilson,
Madeline L. Fox.

Second Term:—

Alice Thomas,
Frances G. Boycott,
Alice Jenner,
Edith C. Wilson.

ENGLISH LITERATURE.

First Term:—

Blanche Collins,
Mrs. Spencer,
Diana Thomas,
Maria Mackenzie.

Second Term:—

Mrs. Spencer,
Alice Jenner,,
Ellen M. Leonard,
Alice Thomas,
Mannie Orr.

GREEK.

ADVANCED.

Second Term:—

Amy H. Prideaux.

LATIN.

ADVANCED.

Second Term:—

Sarah K. Tuckey.

FRENCH.

Men.

ELEMENTARY.

First Term :—
Henry A. Onn.

ADVANCED.

Second Term :—
William H. Holloway,
Henry A. Reed,
William L. Jones.

Women.

ELEMENTARY.

First Term :—
Emily Rossiter,
Florence Eyles.

Second Term :—
Annie Greenman,
Rose Coleman.

ADVANCED.

First Term :—
Myra E. Griffiths,
Adelaide Bernard,
Florence M. Rennolds.

Second Term :—
Myra E. Griffiths.

GERMAN.

First Term :—
Adelaide Bernard.

The list of Honours obtained in the Examinations at the end of the third Term will be found in the Appendix.

FORM OF BEQUEST.

I give to University College, Bristol, the sum of £ to be paid out of such part of my personal estate as I can lawfully charge with the payment of legacies to charitable uses, and to be paid free of legacy duty, within from my death, to the Treasurer, for the time being, of the said College, whose receipt shall be a sufficient discharge for the same.

BRISTOL MEDICAL SCHOOL,

AFFILIATED TO

UNIVERSITY COLLEGE,

BRISTOL.

SESSION 1882-1883.

THE WINTER SESSION

Will commence on MONDAY, October 2nd, 1882, and will continue for Six Months, with a Recess at Christmas.

THE SUMMER SESSION

Will commence on TUESDAY, May 1st, 1883, and will terminate at the end of July.

ADMISSION OF STUDENTS.

Attendance will be given to enter Students and to issue Cards of Admission to Classes* on the following days:—

Winter Session:—MONDAY, October 2nd, 3 to 4 p.m.
Summer Session:—TUESDAY, May 1st, 3 to 4 p.m.

E. MARKHAM SKERRITT, M.D.,
Honorary Secretary.

MEDICAL SCHOOL, UNIVERSITY COLLEGE,
TYNDALL'S PARK, BRISTOL.

* See Regulation 3, p. 10.

GOVERNING BODY.

W. PROCTOR BAKER, Esq. (1), Treasurer to University College; President of the Bristol General Hospital, *Chairman.*

E. C. BOARD, M.R.C.S. (4), Senior Surgeon to the Bristol Royal Infirmary.

F. N. BUDD, M.A. (1), Member of the Council of University College.

G. F. BURDER, M.D., F.R.C.P. (5), Senior Physician to the Bristol General Hospital.

Rev. J. W. CALDICOTT, D.D. (1), Head Master of the Bristol Grammar School.

C. D. CAVE, Esq. (2), President of the Bristol Royal Infirmary.

LEWIS FRY, Esq., M.P. (1), Vice-Chairman of the Council of University College.

E. LONG FOX, M.D., F.R.C.P. (4), Consulting Physician to the Bristol Royal Infirmary.

W. MICHELL CLARKE, M.R.C.S. (5), Consulting Surgeon to the Bristol General Hospital.

Professor B. JOWETT, M.A. (1), Master of Balliol College, Oxford.

F. P. LANSDOWN, M.R.C.S (5), Senior Surgeon to the Bristol General Hospital.

HENRY NAISH, Esq. (3), Treasurer to the Bristol General Hospital.

AUGUSTIN PRICHARD, F.R.C.S (4), Consulting Surgeon to the Bristol Royal Infirmary.

E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., M.R.C.P. (6), Physician to the Bristol General Hospital; Lecturer on Medicine at the Medical School, *Honorary Secretary.*

R. SHINGLETON SMITH, M.D. Lond., B.Sc., M.R.C.P. (6), Physician to the Bristol Royal Infirmary; Lecturer on Physiology at the Medical School.

---

1. Elected by the Council of University College.
2. Elected by the Committee of the Bristol Royal Infirmary.
3. Elected by the Committee of the Bristol General Hospital.
4. Elected by the Staff of the Bristol Royal Infirmary.
5. Elected by the Staff of the Bristol General Hospital.
6. Elected by the Faculty of the British Medical School.

COURSES OF LECTURES.

WINTER SESSION.

MEDICINE.

WILLIAM H. SPENCER, M.A., M.D. Cantab., Physician to the Bristol Royal Infirmary; and
E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., M.R.C.P., Physician to the Bristol General Hospital.

SURGERY.

NELSON C. DOBSON, F.R.C.S., Surgeon to the Bristol General Hospital.

DESCRIPTIVE AND SURGICAL ANATOMY.

F. RICHARDSON CROSS, M.B. Lond., F.R.C.S., Surgeon to the Bristol Royal Infirmary.

PRACTICAL ANATOMY.

DEMONSTRATOR—WILLIAM H. HARSANT, F.R.C.S., Assistant Surgeon to the Bristol Royal Infirmary.

This Department is under the superintendence of the Lecturer on Anatomy. The Demonstrator and the Medical Tutor direct the Students in their dissections.

PHYSIOLOGY.

R. SHINGLETON SMITH, M.D. Lond., B.Sc., M.R.C.P., Physician to the Bristol Royal Infirmary.

CHEMISTRY.

THOMAS COOMBER, F.C.S., Master of the Bristol Trades and Mining Schools.

HYGIENE.

DAVID DAVIES, M.R.C.S., Medical Officer of Health to the City and County of Bristol.

SUMMER SESSION.

MIDWIFERY AND DISEASES OF WOMEN.

JOSEPH G. SWAYNE, M.D. Lond., Consulting Physician-Accoucheur to the Bristol General Hospital; and
A. E. AUST LAWRENCE, M.D., Physician-Accoucheur to the Bristol General Hospital.

MEDICAL JURISPRUDENCE.

REGINALD EAGER, M.D. Lond.; and
ALFRED J. HARRISON, M.B. Lond., Physician to the Bristol General Hospital.

This Course includes Lectures on the various forms of Insanity.

PATHOLOGY AND MORBID ANATOMY.

WILLIAM H. SPENCER, M.A., M.D. Cantab., Physician to the Bristol Royal Infirmary; and
E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., M.R.C.P., Physician to the Bristol General Hospital.

OPERATIVE SURGERY AND SURGICAL PATHOLOGY.

W. POWELL KEALL, M.R.C.S., Surgeon to the Bristol General Hospital.

In this Course each Student performs surgical operations on the dead body. The Course also includes the examination of diseased structures, as illustrated in the contents of the Museum and otherwise.

PRACTICAL SURGERY.

ARTHUR W. PRICHARD, M.R.C.S., Surgeon to the Bristol Royal Infirmary.

This Course includes the following subjects:—The application of anatomical facts to Surgery, on the living person and on the dead body. The methods of proceeding and the manipulations necessary in order to detect the effects of disease and accidents on the living person and on the dead body. The use of Surgical Apparatus.

MATERIA MEDICA AND THERAPEUTICS.

JOHN E. SHAW, M.B. Edin., Physician to the Bristol Royal Infirmary.

PRACTICAL PHYSIOLOGY AND HISTOLOGY.

GEORGE F. ATCHLEY, M.B. Lond., Consulting Surgeon to the Bristol General Hospital.
DEMONSTRATOR—G. MUNRO SMITH, M.R.C.S., L.R.C.P.

This Course includes instruction in the use of the microscope, the examination of the various tissues and organs of the body, and the use of physiological instruments and apparatus.

Each Student is required to provide himself with an efficient microscope and accessory apparatus.

BOTANY.

ADOLPH LEIPNER, Lecturer on Botany in University College.

The Students of this Class attend the Lecturer on Botanical Excursions on Saturday afternoons.

PRACTICAL CHEMISTRY.

THOMAS COOMBER, F.C.S., Master of the Bristol Trades and Mining Schools.

COMPARATIVE ANATOMY.

W. J. SOLLAS, M.A. Cantab., Professor of Geology and Zoology in University College.

Lectures will be given in conformity with the regulation for the Licence in Dental Surgery of the Royal College of Surgeons if a sufficient number of pupils present themselves.

MEDICAL TUTOR.

J. FENTON EVANS, M.B., C.M. Edin.

TIME TABLE.

Winter Session.								Summer Session.							
Classes.	M.	Tu.	W.	Th.	F.	S.	Hours.	Classes.	M.	Tu.	W.	Th.	F.	S.	Hours.
Chemistry	×		×		×		9 a.m.	Practical Physiology	×		×		×		8 a.m.
Physiology	×		×		×		10 a.m.	Botany		×		×		×	8 a.m.
Anatomy		×		×		×	9 a.m.	Practical Chemistry...	×		×		×		9 a.m.
					×		11 a.m.	Materia Medica... ...		×		×		×	9 a.m.
Medicine...	×		×		×		9 a.m.	Midwifery	×	×	×	×	×		8 a.m.
Surgery		×		×		×	9 a.m.	Practical Surgery ...		×		×		×	9 a.m.
Hygiene	×				×		10 a.m.	Pathology	×		×		×		9 a.m.
								Operative Surgery ...		×	×		×		10 a.m.
								Medical Jurisprudence	×			×		×	10 a.m.
								Comparative Anatomy		×	×		×		10 a.m.

HOSPITAL PRACTICE:—

Royal Infirmary—Medical and Surgical Practice, at 12 noon daily. Operations, Tuesday and Friday, at 1.30 p.m.
General Hospital—Medical and Surgical Practice, at 1 p.m. daily. Operations, Thursday, at 1.30 p.m.

FEES.

Chemistry	£5 5s. for each Course.
Physiology	
Anatomy	
Medicine	
Surgery	
Midwifery	£4 4s. for each Course.
Comparative Anatomy	
Botany	£3 3s. for each Course.
Practical Physiology	
Practical Chemistry	
Materia Medica	
Practical Surgery	
Operative Surgery	
Pathology	
Medical Jurisprudence	
Hygiene	£2 2s. for each Course.

Medical Tutor Fee.—Students of Anatomy or Physiology are required to pay a Medical Tutor Fee of £2 2s. *per annum.*

Practical Anatomy.—Students not belonging to the Anatomical Class may dissect on payment of a fee of £3 3s. per Session, in addition to the Medical Tutor Fee.

COMPOSITION FEE.—A Composition Fee of Sixty Guineas is received, which entitles the Student to the full courses of Lectures required for the Degrees of the University of London, and the diplomas of the Royal College of Physicians, the Royal College of Surgeons (Membership), the Society of Apothecaries, and the Army and Navy Boards. The fee includes instruction by the Medical Tutor for two years. Should any Student fail to attend any course with sufficient regularity, unless from illness or other cause deemed satisfactory, he will have to attend again, and to pay the fee for such course beyond what he has already paid in the Composition Fee.

The Composition Fee may be paid in one sum, at the commencement of the first Session; or in two instalments, of 40 guineas at the beginning of the first Session, and 20 guineas at the beginning of the second Session.

Hospital Practice.—For fees for Hospital Practice see pp. 20 and 26.

INFORMATION FOR STUDENTS.

Every Student, prior to the commencement of professional studies, is required to pass one of the Preliminary Examinations in Arts prescribed by the General Medical Council. After having passed such an examination, he must be registered as a Student of Medicine at the office of the Medical Council (315, Oxford Street, London). Information on these subjects may be obtained from the Honorary Secretary to the Bristol Medical School.

Students can complete in Bristol the entire course of study required for the Medical and Surgical Degrees of the University of London, and for the Diplomas of the Royal College of Physicians of London, the Royal College of Surgeons of England, the Apothecaries' Society of London, and the Army and Navy Boards. The lectures and instruction given at University College, Bristol, prepare for the various Preliminary Arts Examinations above referred to, and also for the Matriculation* and Preliminary Scientific Examinations of the University of London; while the Medical School, the Royal Infirmary, and the General Hospital together provide for every detail of the professional curriculum required by the University of London and the above Examining Boards.

Every Student is required to pursue his medical studies for a period of four years from the date of registration before he can present himself for final examination and obtain a licence to practice. The period during which a Student must attend lectures and hospital practice, and the regulations as to the course of study, vary according to the degree or diploma he may wish to obtain. The lectures and hospital practice required by the Royal Colleges of Physicians and Surgeons and the Apothecaries' Society *can* be attended in three years. But candidates for the diplomas of these bodies must be engaged in the acquirement of professional knowledge during a fourth year. It is, therefore, strongly recommended that the compulsory work should not be compressed into the

* The University of London holds Matriculation Examinations at University College, Bristol, as one of its provincial centres, in June.

minimum time allowed, but should be distributed over the whole period of four years, according to the plan laid down on pages 12 and 13. Thus ample time will be permitted for the effectual study of each subject in its proper place in the curriculum, and the Student will be able to devote himself solely to the subjects of the several examinations as the time for passing them arrives.

All necessary information as to the course to be pursued for any particular degree or diploma will be given by the Honorary Secretary to the Bristol Medical School. Further particulars regarding the Infirmary may be obtained from the Dean of the Infirmary Faculty, Mr. F. Richardson Cross, and respecting the Hospital from the Dean of the Hospital Faculty, Dr. Markham Skerritt.

GENERAL REGULATIONS.

1. Every Candidate for admission as a Student is required to produce a satisfactory testimonial of good character.

2. Every Student on his admission is required to subscribe in the General Register a declaration of acquiescence in the Regulations of the School.

3. Cards of admission to all or any of the Classes can be obtained only of the Honorary Secretary, to whom all fees are to be paid in advance. The cards are to be taken to be countersigned by the Lecturers respectively, and *attendance on each Class dates from such signature.*

4. The attendance of Students on Lectures is registered. Periodical examinations are held in all the Classes in accordance with the requirements of the Examining Boards, and attendance on these examinations is essential.

5. Students intending to present themselves for examination at the Royal College of Surgeons are required to give due notice to the Secretary, and to pass a Test Examination in those subjects on which they will be examined at the College.

6. Certificates of attendance will be withheld from any Student whose conduct or attendance shall be deemed unsatisfactory.

7. In the event of faulty attendance, idleness, or misconduct on the part of any Students, the same will be reported to their parents or guardians after each of the periodical Class Prize Examinations.

8. The discipline of the School generally is under the charge of the Honorary Secretary, or, in his absence, of the Medical Tutor, who will report any instances of misconduct. During the attendance of a Lecturer in any room for the purpose of teaching he is charged with the maintenance of order therein.

9. The power of suspending or expelling any Student for misconduct, whether within the precincts of the School or otherwise, is vested in the Governing Body.

MEDICAL TUTOR.

The Medical Tutor is in constant attendance at the School to assist Students in their practical Anatomical and Physiological studies.

ORDER OF STUDY.

FIRST YEAR.

Winter Session.	Summer Session.
Anatomy (bones, joints, muscles, and viscera).	Botany.
Physiology.	Materia Medica.
Chemistry.	Practical Chemistry.
Dissections.	Practical Physiology & Histology.
Surgical Hospital Practice.	Practical Pharmacy.
Post Mortem Demonstrations.	Surgical Hospital Practice.
	Examination of Surgical Patients.
	Post Mortem Demonstrations.

SECOND YEAR.

Winter Session.	Summer Session.
Anatomy.	Midwifery.
Physiology.	Practical Surgery.
Dissections.	Comparative Anatomy (for F.R.C.S., &c.).
Medical Hospital Practice.	Medical Hospital Practice.
Surgical Hospital Practice.	Surgical Hospital Practice.
Surgical Clinical Lectures.	Surgical Clinical Lectures.
Post Mortem Demonstrations.	*Post Mortem* Demonstrations.

N.B.—At the end of the Second Winter Session *the Student should be prepared to pass the Primary Examination of the Royal College of Surgeons, or the equivalent examination of some other Examining Board.*

THIRD YEAR.

Winter Session.	Summer Session.
Medicine.	Medical Jurisprudence.
Surgery.	Pathology and Morbid Anatomy.
Medical Hospital Practice.	Operative Surgery.
Medical Clinical Lectures.	Medical Hospital Practice.
Surgical Hospital Practice.	Medical Clinical Lectures.
Surgical Clinical Lectures.	Surgical Hospital Practice.
Post Mortem Demonstrations.	Surgical Clinical Lectures.
	Post Mortem Demonstrations.

FOURTH YEAR.

Winter Session.	Summer Session.
Medicine.	Medical Hospital Practice.
Hygiene.	Medical Clinical Lectures.
Medical Hospital Practice.	*Post Mortem* Demonstrations.
Medical Clinical Lectures.	
Post Mortem Demonstrations.	

NOTE.—Students who intend to complete their Lectures and Hospital Practice in three years must attend Lectures on Medicine during the second Winter Session, and Lectures on Clinical Medicine during the Second Winter and Summer Sessions.

DRESSERSHIPS.—Students are strongly advised not to become Dressers until after passing the Primary Examination.

CLINICAL CLERKSHIPS may be most advantageously held in the third or the fourth year.

PRACTICAL MIDWIFERY.—Students who have attended the Midwifery Course will be provided with cases to attend, under the supervision of the Lecturers.

CLINICAL STUDY OF THE DISEASES OF WOMEN (as required for the L.R.C.P. Exam.).—Six months should be devoted to this subject in the third or the fourth year.

INSTRUCTION IN VACCINATION may conveniently be obtained in the third or the fourth year.

PRIZES AND CERTIFICATES OF HONOUR.

Prizes and Certificates of Honour are publicly distributed at the beginning of each Summer Session to the Students who have been successful in the examinations of the year.

No prize can be obtained twice by the same Student.

Prizes and Certificates of Honour are awarded in *each* of the following subjects:—

For First Year's Students.—Anatomy and Physiology—Chemistry—Materia Medica—Practical Physiology and Histology—Botany—Practical Chemistry.

For Second Year's Students.—Anatomy—Physiology—Practical Anatomy—Midwifery—Practical Surgery. *Certificates* in Comparative Anatomy.

For Third Year's Students.—Medicine (open to Students of the third or the fourth year)—Surgery—Pathology—Medical Jurisprudence—Operative Surgery.

For Fourth Year's Students.—*Certificates* in Hygiene.

HOSPITAL PRACTICE AND CLINICAL LECTURES.

Hospital Practice may be attended either at the Bristol Royal Infirmary or at the Bristol General Hospital (see pages 17 and 24).

BRISTOL ROYAL INFIRMARY.

Honorary and Consulting Physicians:

FREDERICK BRITTAN, M.D.
ALEXANDER FAIRBROTHER, M.D.
EDWARD LONG FOX, M.D.

Honorary and Consulting Surgeons:

JOHN HARRISON, F.R.C.S.
AUGUSTIN PRICHARD, F.R.C.S.

Physicians:

WILLIAM H. SPENCER, M.A., M.D., Cantab., *Lecturer on Medicine and Pathology at the Medical School.*

R. SHINGLETON SMITH, M.D. Lond., B.Sc., M.R.C.P., *Lecturer on Physiology at the Medical School.*

HENRY WALDO, M.D.

JOHN E. SHAW, M.B. Edin., *Lecturer on Materia Medica at the Medical School.*

Surgeons:

EDMUND C. BOARD, M.R.C.S.

CHRISTOPHER H. DOWSON, M.R.C.S.

ARTHUR W. PRICHARD, M.R.C.S., *Lecturer on Practical Surgery at the Medical School.*

F. RICHARDSON CROSS, M.B. Lond., F.R.C.S., *Lecturer on Anatomy at the Medical School.*

J. GREIG SMITH, M.A., M.B., C.M.

Assistant Surgeon:

WILLIAM H. HARSANT, F.R.C.S., *Demonstrator of Anatomy at the Medical School.*

Medical Superintendent:

J. H. LEE MACINTIRE, M.R.C.S.

House-Physician:

C. S. WATSON, M.B. Edin.

House-Surgeon:

A. A. LENDON, M.D. Lond.

THE Infirmary was founded in the year 1735, and is one of the largest provincial hospitals in England. It contains 264 beds.

The Infirmary has recently undergone a complete renovation in accordance with the most approved modern principles of hospital construction. It includes a large ward exclusively appropriated to children, separate ward for Eye cases and other special purposes, and two wards apart from the main building for cases requiring isolation. It is provided with all the necessary appliances for a complete clinical education.

IN-PATIENTS.

Medical and Surgical cases are admitted daily at eleven o'clock. Nearly 3,000 In-patients are annually treated in the wards.

OUT-PATIENTS.

The Out-patient department is very extensive, upwards of 20,000 patients being annually prescribed for, and the whole of its resources are utilised for the instruction of Students. This department is under the charge of the Physicians and Surgeons and the Assistant-Surgeon. Students have opportunities for examining the cases, and are instructed in diagnosis and modes of treatment. For Students this department is of very great value, as the diseases treated in it constitute the large majority of ordinary cases met with in practice.

THE LIBRARY

contains nearly 3,000 volumes, comprising most of the standard works on Medicine, Surgery, and the cognate sciences; also the Medical Periodicals of the day. Students are allowed to take home any books they may require.

THE MUSEUM

(Founded by Richard Smith, Esq., formerly Surgeon to the Infirmary)

is open to all Students, under the supervision of the Curator. It contains a very large series of preparations of diseased bones; a remarkable collection of calculi, including upwards of 500 groups; numerous pathological preparations, arranged with a special view to the study of pathology; a Materia Medica collection; and a large collection of illustrative microscopic slides.

A Preparation Room and a Histological Room are attached to the Museum, in which the Students have the opportunity of working under instruction and supervision.

THE DISPENSARY AND LABORATORY.

In this department Students are instructed in Practical Pharmacy, the analysis of urine, and other chemical manipulations connected with practical medicine.

CLINICAL INSTRUCTION.

(See Time Table on page 21.)

In the Wards.—The wards are visited daily, by the Physicians at twelve o'clock and by the Surgeons at one o'clock, when Clinical instruction is given to the Students in attendance.

On Saturdays the Physicians meet at one o'clock and the Surgeons meet at half-past one o'clock in the wards for consultation on such cases as may require it.

In the Out-Patient Department.—Instruction is given on four days in the week at twelve o'clock by the Physicians and Surgeons.

Operations are performed, except in cases of emergency, on Tuesdays and Fridays at half-past one o'clock.

Clinical Lectures are given regularly during the Winter and Summer Sessions, by the Physicians on Saturdays at twelve o'clock, and by the Surgeons on Fridays at twelve o'clock. Attendance on these lectures is registered and certificates are given accordingly.

Post-Mortem Examinations are conducted at twelve o'clock under the direction of one of the Physicians or Surgeons or the Medical Superintendent, and demonstrations are given on the cases to the Students in attendance.

Instruction is also given in the following

SPECIAL CLINICAL DEPARTMENTS.

Ophthalmic Department.—Demonstrations and instruction in Diseases of the Eye and the use of the ophthalmoscope are given by Mr. Arthur W. Prichard on Thursdays at eleven o'clock, and by Mr. F. Richardson Cross on Saturdays at half-past ten o'clock.

Obstetric Department.—Special instruction in Diseases peculiar to Women is given in the wards and out-patient rooms by Mr. J. Greig Smith on Wednesdays at eleven o'clock.

Department for Diseases of the Throat and Ear.—Demonstrations and instruction, including the use of the laryngoscope and other apparatus, are given by Mr. Harsant on Tuesdays at eleven o'clock.

Department for Diseases of Children.—Special facilities are afforded for the study of children's diseases in the ward set apart for the purpose.

CLINICAL APPOINTMENTS.

Dresserships.—Students are appointed to Dresserships after the first year of study. Dressers attend to the patients in the wards and in the out-patient department, and assist at operations under the direction of the Surgeons.

Resident Dresserships.—Students are appointed by the Surgeons from the most diligent and qualified of the Dressers to reside in the Infirmary in weekly rotation. They are in charge of all casualties, under the supervision of the resident Medical Officers. By this privilege, and from the number of accidents happening in the factories, among the shipping and in the neighbourhood generally, they have more than ordinary opportunities for learning Practical Surgery.

Clinical Clerkships.—Students are appointed to Clinical Clerkships in their third and fourth years of study. The Clinical Clerks alone have the privilege of keeping the case-books and visiting the wards by themselves, and they receive special clinical instruction.

Pathological Clerkships.—A Pathological Clerk is appointed every four months from those students who send in their names for the office. It is his duty to make all *Post Mortem* Examinations and keep the pathological register during his term of office, under the direction of one of the Physicians or Surgeons or the Medical Superintendent.

Obstetric Clerkships.—Students who have attended lectures on Midwifery and also entered to the Surgical practice of the Infirmary, may take out an Obstetric Clerkship under the Surgeon

in charge of the Obstetric department. The Obstetric Clerks have the privilege of keeping the case-books and assisting at operations and examinations of patients.

PRIZES.

Suple's Medical Prize, consisting of a Gold Medal of the value of Five Guineas, and about Seven Guineas in money, is given annually to the successful candidate in the Examination held by the Physicians. The examination comprises reports of cases in the medical wards, and the preparation of morbid specimens illustrative of disease, accompanied if possible by microscopic and chemical illustrations, besides written replies to questions in Medicine.

Suple's Surgical Prize corresponds in value and character to the Medical one described above. In this case the examination is conducted by the Surgeons, and comprises Surgical subjects only.

Clarke's Prize.—The interest of £500, bequeathed by the late Henry Clarke, Consulting Surgeon to the Infirmary, will be given annually to the most successful student of the third year at the examinations held at the Medical School, provided he has attended his Hospital Practice at the Bristol Royal Infirmary, and can produce certificates of good moral character.

Tibbits' Memorial Prize.—A prize founded by public subscription in memory of the late R. W. Tibbits, Surgeon to the Infirmary, being the interest of £315, will be offered for competition annually to the advanced students for the greatest proficiency in Practical Surgery.

Crosby Leonard's Prize.—The interest of £300, bequeathed by the late Crosby Leonard, Consulting Surgeon to the Infirmary, will be awarded annually in September to that student who, during the third year of his attendance on the Surgical practice of the Infirmary, shall in the opinion of the Surgeons furnish the best written reports of ten surgical cases (not being those taken for the Surgical Suple Prize) occurring in the wards.

Pathological Prize.—The Pathological Clerk, at the expiration of his term of office, will receive a prize of the value of Three Guineas, if his duties have been performed to the satisfaction of the Faculty.

ADMISSION OF STUDENTS.

Students may enter for Medical or Surgical Practice for six months or more. Those who enter for Medical or Surgical Practice are entitled to attend the practice of all the Physicians or all the Surgeons at the usual daily visits, and to attend Clinical lectures and the instruction in the special departments. Those who also take out Clinical Clerkships or Dresserships attach themselves to some one Physician or Surgeon, under whose direction they act and from whom they receive special Clinical instruction.

Application for information and admission to be made to the Dean of the Faculty, Mr. F. Richardson Cross.

FEES.

An Entrance Fee of Two Guineas to the Infirmary, and Subscription of One Guinea per annum to the Library.

	Six Months.	One Year.	Perpetual.
Medical Practice ..	7 Guineas	12 Guineas	20 Guineas
Surgical Practice ..	7 "	12 "	20 "
Medical and Surgical Practice together, in one payment		20 "	35 "

The above Fees include Clinical Lectures.

Clinical Clerkship ..	5 Guineas	8 Guineas
Dressership	5 Guineas for each six months	
Obstetric Clerkship ..	3 Guineas for each three months	

All Fees are paid to the Secretary, at the Infirmary.

BRISTOL ROYAL INFIRMARY.

TIME TABLE OF CLINICAL INSTRUCTION.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
Visits to Wards. Physicians.	12.0 *Dr. Shaw.*	12.0 *Dr. S. Smith.*	12.0 *Dr. Spencer.*	12.0 *Dr. Waldo.*	12.0	1.0 *Consultations.*
Visits to Wards. Surgeons.	1.0 *Mr. G Smith.*	1.0 *Mr. Board.*	1.0 *Mr. Dowson.*	1.0 *Mr. Cross.*	1.0 *Mr. Prichard.*	1.30 *Consultations.*
Operations.		1.30			1.30	
Medical Out-patients.	12.0 *Dr. S. Smith.*	12.0 *Dr. Waldo.*	12.0 *Dr. Shaw.*	12.0 *Dr. S. Smith.*		
Surgical Out-patients.	11.0 *Mr. Cross.*	12.0 *Mr. Harsant.*	12.0 *Mr. G. Smith.*	12.0 *Mr. Prichard.*		
Clinical Lectures.					12.0 *Surgical.*	12.0 *Medical.*
Ophthalmic Demonstrations.				11.0 *Mr. Prichard.*		10.30 *Mr. Cross.*
Obstetric Practice.			11.0 *Mr. G. Smith.*			
Demonstrations in Throat and Ear Diseases.		11.0 *Mr. Harsant.*				
Post-Mortem Examinations.	At Twelve o'clock.					

BRISTOL GENERAL HOSPITAL.

Honorary and Consulting Surgeons:

ROBERT W. COE, F.R.C.S. W. MICHELL CLARKE, M.R.C.S.

HENRY MARSHALL, M.D., F.R.C.S. Edin., F.R.S. Edin.

GEORGE F. ATCHLEY, M.B. Lond.

Honorary and Consulting Physician-Accoucheur:

JOSEPH G. SWAYNE, M.D. Lond., *Lecturer on Midwifery at the Medical School.*

Physicians:

GEORGE F. BURDER, M.D., F.R.C.P.

E. MARKHAM SKERRITT, M.D. Lond., B.S., B.A., M.R.C.P., *Lecturer on Medicine and on Pathological Anatomy at the Medical School.*

ALFRED J. HARRISON, M.B. Lond., *Lecturer on Medical Jurisprudence at the Medical School.*

Surgeons:

F. POOLE LANSDOWN, M.R.C.S.

NELSON C. DOBSON, F.R.C.S., *Lecturer on Surgery at the Medical School.*

WILLIAM P. KEALL, M.R.C.S., *Lecturer on Operative Surgery at the Medical School.*

CHARLES F. PICKERING, F.R.C.S.

Physician-Accoucheur:

A. E. AUST LAWRENCE, M.D., *Lecturer on Midwifery and Diseases of Women at the Medical School.*

Dentist:

THOMAS C. PARSON, M.R.C.S., *Lecturer on Dental Mechanics at the Medical School.*

House-Surgeon:

W. J. PENNY, M.R.C.S., L.R.C.P.

Physicians' Assistant:

J. R. WOOLBY, M.R.C.S., L.R.C.P.

Assistant House-Surgeon:

H. L. ANSTED, M.R.C.S., L.R.C.P.

This Hospital, founded in 1832, is situated in a populous district near the Docks, Colleries, Manufactories, and Railway Stations, from which sources the Wards are supplied with a great variety of important cases.

The present building was completed and occupied in 1858, and is furnished with many modern improvements. It contains 154 beds, with a special Children's Ward, and also Private Wards and Isolated Wards.

OUT-PATIENT DEPARTMENT.

This Department affords a large and most valuable field of observation. It is under the care of the Physicians and Surgeons, by whom the Students are instructed in the practical examination of patients and the treatment of the various forms of disease here met with.

In-Patients are admitted daily (Sundays excepted) at half-past twelve o'clock.

Out-Patients are admitted daily at the same hour.

Casualties.—Emergencies and casualties are admitted at all hours by the Resident Medical Officers.

SCHOLARSHIPS.

Martyn Memorial Entrance Scholarship.—This Scholarship, of the value of £20, founded by public subscription in memory of the late Dr. Samuel Martyn, Physician to the Hospital, is awarded annually, at the commencement of the Winter Session, after a competitive examination in subjects of general education.

Clarke Scholarship.—A Surgical Scholarship of £15, founded by H. M. Clarke, Esq., of London, is awarded annually, at the end of the Winter Session, after an examination in Surgery.

Sanders Scholarship.—A Scholarship founded by the late John Nash Sanders, Esq., and consisting of the interest of £500, is awarded annually, at the end of the Winter Session, after examination in Medicine, Surgery, and Diseases of Women.

Lady Haberfield Prize.—This Scholarship, founded by the late Lady Haberfield, and consisting of the interest of £1,000, is awarded annually, at the end of the Winter Session, after examinations in Medicine, Surgery, and Diseases of Women.

The *Martyn Memorial Scholarship* and the *Lady Haberfield Prize*, when not awarded as above, are available for the remuneration of a Museum Curator, to be appointed from amongst the

students after a competitive examination in subjects bearing upon the duties of the office.

The rules relating to the several Scholarships may be had on application.

THE LIBRARY.

The Library, with a commodious Reading Room, contains a good and increasing collection of Medical Works, the principal Journals, excellent Microscopes, and other Physical Apparatus. Instruction in the use of the Microscope and Chemical Analysis, in connection with the Clinical Teaching, is given by the Faculty.

THE MUSEUM.

The Museum contains numerous interesting and instructive specimens. Curators are appointed from the Students of the Hospital (see Scholarships, page 23.)

CLINICAL INSTRUCTION.

The whole of the practice of the Hospital, including the special Departments mentioned below, is open to the Students of the Hospital.

Wards.—The Wards are visited daily, by the Physicians at two o'clock, and by the Surgeons at half-past one, when general Clinical Instruction is given.

Out-Patient Department.—Instruction is given daily by the Physicians and Surgeons at one o'clock. Students are specially advised to avail themselves of the opportunity which this Department affords of acquiring accuracy in the physical examination of patients and the diagnosis and treatment of disease.

Operations.—Surgical operations, except in cases of emergency, are performed on Thursdays, at half-past one o'clock.

Clinical Lectures are given throughout the Winter and Summer Sessions, by the Physicians on three days of the week, and by the Surgeons every Wednesday at twelve o'clock. (See Time Table, page 27.)

Post Mortem Examinations are conducted, and Pathological Demonstrations given, by the Physicians and Surgeons at two o'clock.

SPECIAL DEPARTMENTS.

In these Departments instruction is given in the use of the various instruments and appliances special to each.

Diseases of Women.—Dr. Aust Lawrence visits on Mondays and Thursdays at twelve o'clock, and gives Clinical Instruction in the Diseases peculiar to Women.

Diseases of the Skin.—Patients affected with Skin Diseases are seen by Dr. Harrison, at one o'clock, on Fridays.

Diseases of the Eye.—In this Department, Ophthalmic cases are seen on Wednesdays, at one o'clock, by Mr. Keall.

Diseases of the Ear and Throat.—Patients are seen on Mondays at twelve o'clock, by Mr. Pickering.

Diseases of Children.—In addition to the special Children's Ward in the Hospital, the Out-Patient Department affords abundant material for the study of the Diseases of Children.

Dental Surgery.—Mr. Parson attends on Mondays and Thursdays, at nine o'clock, and gives practical instruction in Dental Surgery.

PRACTICAL PHARMACY.

Private instruction in Practical Pharmacy is given to Students on payment of a Laboratory Fee to the Hospital.

CLINICAL CLERKS, DRESSERS, AND RESIDENT PUPILS.

Clinical Clerks.—While ordinary Pupils enter to the general practice and accompany the Physicians on their usual visits, Students who become Clinical Clerks, besides this, place themselves under one Physician, from whom they receive private instruction in the practice of medicine. The Clinical Clerks alone have the privilege of recording cases and visiting the wards by themselves.

Dressers reside in the Hospital by rotation and free of expense. They have the privilege of dressing the cases in the wards, and of attending the minor casualties, and also the severe accidents, under the direction of the House-Surgeon.

Obstetric Clerks.—Students can enter as Obstetric Clerks, under the Physician-Accoucheur, for periods of three months.

Dressers to the Eye and Ear Departments respectively are appointed from amongst the Students of the Hospital, for periods of three months, without payment of fee.

FEES.

	For Six Months.	One Year.	Perpetual.
Medical or Surgical Practice	£6	£10	£20

Extra Fee for Clinical Clerk or Dresser, 5 Guineas for six months.

" Obstetric Clerk .. .. 3 Guineas for three months.

Library Fee .. .. 1 Guinea per annum.

Fees are to be paid to the Secretary of the Hospital, Lieutenant Henry Fox, R.N.

BRISTOL GENERAL HOSPITAL.

TIME TABLE OF CLINICAL INSTRUCTION.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
Visits to Wards—Physicians	2 p.m. Dr. Burder. Dr. Markham Skerritt.	2 p.m. Dr. Harrison.	2 p.m. Dr. Markham Skerritt.	2 p.m. Dr. Burder.	2 p.m. Dr. Markham Skerritt. Dr. Harrison.	
Visits to Wards—Surgeons	1.30 p.m. The Surgeon for the week.	1.30 p.m. Mr. Lansdown. Mr. Dobson	1.30 p.m. Mr. Keall. Mr. Pickering.	1.30 p.m. The Surgeon for the week.	1.30 p.m. Mr. Lansdown. Mr. Dobson.	1.30 p.m. Mr. Keall. Mr. Pickering.
Operations				1.30 p.m.		
Medical Out-Patients	1 p.m. Dr. Markham Skerritt.	1 p.m. Dr. Harrison.	1 p.m. Dr. Markham Skerritt.	1 p.m. Physician's Assistant.	1 p.m. Dr. Harrison.	1 p.m. Physician's Assistant.
Surgical Out-Patients	1 p.m. The Surgeon for the week.	1 p.m. Mr. Lansdown. Mr. Dobson.	1 p.m. Mr. Keall. Mr. Pickering.	1 p.m. The Surgeon for the week.	1 p.m. Mr. Lansdown. Mr. Dobson.	1 p.m. Mr. Keall. Mr. Pickering.
Clinical Lectures ..	*Medical.*—2 p.m. Dr. Burder.	*Medical.*—2 p.m. Dr. Harrison.	*Surgical.*—12 noon. The Surgeons in turn.		*Medical.*—2 p.m. Dr. Markham Skerritt.	
Diseases of Women..	12 noon. Dr. Aust Lawrence.			12 noon. Dr. Aust Lawrence.		
Diseases of the Skin		1 p.m. Dr. Harrison.			1 p.m. Dr. Harrison.	
Diseases of the Eye			1 p.m. Mr. Keall.			1 p.m. Mr. Keall.
Diseases of the Ear and Throat ..	12 noon. Mr. Pickering.		1.30 p.m. Mr. Pickering.			
Dental Surgery ..	9 a.m. Mr. Parson.			9 a.m. Mr. Parson.		
Post-Mortem Examinations	At 2 p.m. by the Physicians and Surgeons.					

RECENT PRIZEMEN

AT THE

MEDICAL SCHOOL, THE ROYAL INFIRMARY, AND THE GENERAL HOSPITAL.

Barker, W. J. T., 1881.
Belfield, C. W., 1872 and '73
Benham, W. T., 1868, '69 and '70.
Birch, De B., 1873 and '74.
Blacker, E., 1876.
Bossier, A. H., 1877 and '78.
Bush, J. P., 1880 and '81.
Chute, H. M., 1868, '69 and '70.
Cripps, C. C., 1875.
Cunningham, A. G., 1880.
Day, W. A., 1877.
Fitz-Gerald, C., 1869.
Fendick, R. W., 1872.
Francis, W. H., 1878 and '80.
Guy, J. R., 1875.
Heaven, J. C., 1876.
Henderson, C., 1874, '76 and '77.
Herapath, C. K. C., 1871 and '73.
Hodges, W., 1869.
Jefferis, J. E., 1880.
Jenkins, J., 1881.
Jones, C. C., 1875.
Jones, W. A., 1881.
Kiddle, I, 1881.
King, A. J., 1869.
Knapp, E. M., 1876.
Lawrence, A. E. A., 1870 and '71.
Little, A. N., 1881.
Logan, F. T. B., 1877, '78 and '79.
Lysaght, W. C., 1881.
Mackenzie, J., 1871.
Marsh, T. A. P., 1877, '78, '79 and '80.
Marsh, W. G. H. B., 1875.
Marshall, L. W., 1869 and '70.
Massiah, B. J., 1871, '72 and '73.
Morton, F., 1878.
Myles, J. P., 1880 and '81.
Myles, G. T., 1880.
Newman, C., 1872, '73 and '74.
Norton, T. C., 1876 and '77.
Palmer, F. C., 1874.
Parker, A. F., 1874.
Parry, J. H., 1877.
Peck, F. S., 1878.
Penruddocke, C., 1878.
Prichard, A. W., 1870, '71, '72 and '73.
Prockter, A. E., 1869.
Rankin, L. K., 1881.
Roué, W. B., 1878 and '79.
Rudge, C. K., 1878.
Rudge, H. T., 1880 and '81.
Salmon, L. E. A., 1879, '80 and '81.
Smith, G. M., 1877.
Stevens, F. G., 1872 and '74.
Sturge, W. A., 1869 and '70.
Taylor, F., 1875.
Taylor, J., 1874 and '75
Thurston, H. C., 1881.
Tomkins, H. H., 1880.
Tratman, F., 1879, '80 and 81.
Visger, H., 1879.
Waldo, H., 1870.
Weatherly, L. A., 1872.
Weir, F. W., 1880.
Wheeler, W. H., 1878.
Whitfield, W. J. C., 1872 and '76
Williams, W. R., 1872 and '76.
Williams, P. W., 1881.
Windsor-Aubrey, H. W., 1880 and '81.
Young, A. S. W., 1874.
Young, C. L., 1877.

LIST OF SCHOLARSHIPS, PRIZES, AND CERTIFICATES OF HONOUR FOR THE YEAR 1881-82.

MEDICAL SCHOOL.

Summer Session.

Botany	*Prize*, W. G. Thorold. *Certificates*, A. J. Gibbons, F. J. Wethered.
Practical Chemistry	*Certificates*, W. H. Stevens, F. J. Wethered.
Practical Physiology and Histology	*Prize*, W. G. Thorold. *Certificates*, H. J. Capron, R. G. Cookson, C. J. S. Shaw, A. M. Gray and G. C. Helps (equal), W. Basset, E. J. Hawkes, A. R. Aubrey and L. H. Williams (equal), A. Bulleid, H. A. Spencer, R. W. Councell and W. H. Stevens (equal).
Materia Medica and Therapeutics	*Prize*, H. J. Capron. *Lecturer's Prize*, A. R. Aubrey. *Certificates*, W. G. Thorold, R. G. Cookson, E. J. Laurence, R. W. Councell.
Obstetric Medicine	*Prize*, W. J. T. Barker and E. A. Hughes (equal). *Certificates*, H. H. Tomkins, W. A. Jones, W. C. Lysaght, H. W. W. Aubrey, H. C. Thurston, H. Simmons.
Operative and Practical Surgery	*Prize*, H. T. Rudge. *Operative Surgery:* *Certificate*, J. Jenkins. *Practical Surgery:* *Certificates*, H. H. Tomkins, E. A. Hughes, W. J. T. Barker, H. C. Thurston, W. C. Lysaght and H. Simmons (equal), F. W. Weir.
Pathology and Morbid Anatomy	*Prize*, H. T. Rudge.
Medical Jurisprudence	*Prize*, L. E. A. Salmon.

WINTER SESSION.

Anatomy and Physiology, (Junior Class)...	*Prize*, A. J. Tomkins.
Certificates in Junior Class of Anatomy	A. J. Tomkins, C. J. S. Shaw, L. H. Williams, H. J. Pocock, W. C. Swayne.
Certificates in Junior Class of Physiology	A. J. Tomkins, L. H. Williams, H. J. Pocock, W. C. Swayne, C. J. S. Shaw, A. R. Aubrey.
Anatomy, Senior Class	*Prize* (equal), A. N. Little and W. G. Thorold. *Certificates*, P. W. Williams, W. Basset, H. J. Capron, F. J. Wethered, G. C. Helps.
Physiology, Senior Class ...	*Prize*, W. G. Thorold. *Certificates*, P. W. Williams, A. N. Little, W. Basset, H. J. Capron, F. J. Wethered, A. M. Gray.
Practical Anatomy...	Prize, P. W. Williams. *Prosector's Certificates*, A. N. Little and P. W. Williams (equal).
Chemistry...	*Prize*, W, C. Swayne. *Certificates*, C. J. Glasson, W. T. Ord.
Medicine	*Prize*, H. H. Tomkins. *Certificates*, H. C. Thurston, E. A. Hughes.
Surgery	*Prize*, E. A. Hughes. *Certificates*, H. Simmons, W. J. T. Barker, H. C. Thurston, H. H. Tomkins.

BRISTOL ROYAL INFIRMARY.

Suple's Surgical Prize, a Gold Medal and Seven Guineas in money	H. C. Thurston.
Clarke's Prize, of the value of £15, awarded to the most successful Student of the third year	E. A. Hughes.
Tibbits' Memorial Prize, of the value of £7, for proficiency in Practical Surgery... ...	H. Simmons.
Pathological Prizes	L. E. A. Salmon, E. H. Meaden.

BRISTOL GENERAL HOSPITAL.

Martyn Memorial Entrance Scholarship, of the value of £20, for proficiency in Classics, Mathematics, Modern Languages and Physics	W. T. Ord.
Clark Scholarship, of the value of £15, for proficiency in Surgery	F. W. Weir.
Sanders' Scholarship, of the value of £22 10s., for proficiency in Medicine, Surgery and Obstetric Medicine	H. T. Rudge.
Lady Haberfield Prize, of the value of £30, for proficiency in Medicine, Surgery and Obstetric Medicine	H. T. Rudge.
Pathological Clerkship Prize, of the value of £5	H. T. Rudge.

Further particulars respecting the Infirmary may be obtained on application to the Dean of the Infirmary Faculty, Mr. F. Richardson Cross; respecting the Hospital, on applicatien to the Dean of the Hospital Faculty, Dr. Markham Skerritt.

Information regarding the Medical School will be afforded by the Honorary Secretary of the School,

E. MARKHAM SKERRITT, M.D.

Medical School, University College,
Tyndall's Park, Bristol.

J. W. ARROWSMITH, PRINTER, QUAY STREET, BRISTOL.

The Scholastic Trading Co.

LIMITED,

34 BRIDGE STREET, BRISTOL,

Wholesale and Retail

BOOKSELLERS AND STATIONERS.

THE ABOVE COMPANY SUPPLIES

SCHOOL AND COLLEGE TEXT BOOKS,

STATIONERY AND MATERIAL,

ON THE MOST SATISFACTORY TERMS.

The Stock is of the most varied description, comprising all classes of General and Educational Literature, Text Books for College use being largely held.

The Educational Department

Presents great advantages in the supply of

SCHOOL BOOKS, SCHOOL STATIONERY, | SCHOOL MATERIALS, SCHOOL FURNITURE,

OF EVERY DESCRIPTION.

The General Bookselling Department

Includes New and Standard Works in every department of Literature, and thousands of books suitable for Prizes, Presentations, etc.

The Bible Department

Includes a varied assortment of Bibles, Prayer Books and Church Services, Publications of the CHRISTIAN KNOWLEDGE SOCIETY, Sunday School Union, Church Sunday School Institute, Wesleyan Conference Office, Religious Tract Society, National Society, etc.

The Stationery Department

Includes Writing and Commercial Papers and Envelopes, Ledgers, Cash Books, Time Books, Bill Books, Exercise Books, Copying Presses, and every description of General and Office Stationery.

The Fancy Goods Department

Contains a choice collection of Work Boxes, Desks, Inkstands, Satchels, Photo Albums, Purses, Pocket Books, and Fancy Articles of all kinds.

The Bookbinding Department

Is thorough and complete. Every description of Bookbinding, in cloth, half-roan, half-calf, full calf, morocco, russia, executed efficiently and promptly. Special rates for large quantities.

The Printing (Letterpress and Lithographic) Department

Orders for Prospectuses, Catalogues, Society Rules, Reports, Posters, Handbills, Cards, Circulars, Programmes, Tabular Works, Legal Forms, Invoices, and every kind of Mercantile Work, Statements, Share Certificates, Cheques, Receipts, Letter and Note Headings, Memorandums, Price Tickets, Labels, etc., etc., executed with promptitude and on the most reasonable terms. Estimates given for every class of work.

The School, Office and Home Furniture Department

The whole of the Furniture manufactured by us is made by the most experienced Cabinet Makers, and is superior to the ordinary Machine-made Furniture. Great care is taken in the selection of the Wood, and all Goods are warranted to be of the best possible quality.

CATALOGUES POST FREE ON APPLICATION TO THE MANAGER.

Select, Varied and Comprehensive.

The Royal Library,

(IN CONNECTION WITH MUDIE'S,)

NEW BOOK AND MAGAZINE DEPÔT,

36 Regent Street, Clifton,

BRISTOL.

The above is acknowledged to be the most complete Library in the Provinces.

Patronized by the Elite of Clifton, Bristol and its Environs, and by many leading Families in the Western Counties.

50,000 VOLUMES.

The Collection comprises all the **best recent Works.** of every shade of opinion, on all subjects of general interest, and is therefore not only **select** but **varied and comprehensive.**

Arrangements are made with the leading Publishers for an ample supply of the newest Books as they issue from the Press.

Terms of Subscription:

ONE GUINEA PER ANNUM AND UPWARDS.

Free Delivery of Books in any part of Clifton, Bristol, Cotham, Redland, Sneyd Park, Westbury, &c.

BOOK SOCIETIES SUPPLIED.

New Books, Magazines, Stationery, Die Sinking, Plain and Colour Stamping.

PLEASE ADDRESS—

HENRY GREENWOOD, Royal Library,
36 REGENT STREET, CLIFTON.

COLLINS' SCIENCE TEXT-BOOKS.

ADVANCED SERIES.—*Printed in Post 8vo, with numerous Illustrations; extensively used in Colleges and Public Schools, and adapted for the Government and other Special Examinations.*

1. Practical Plane Geometry and Projection. By H. Angel, Birkbeck Literary and Scientific Institute, London. Vol. 1. Text, 4s.; Vol. 2. Plates, 6s.

2. Machine Construction. By Edward Tomkins, and edited by Henry Evers, LL.D. 2 vols. Plates, 4to, cloth, 7s.; Text, 3s. 6d.

3A. Building Construction: Masonry. By R. S. Burn, C.E. 2 vols. Plates, 5s.; Text, 2s. 6d.

3B. Building Construction: Carpentry. By R. S. Burn, C.E. 2 vols. Plates, 4to, cloth, 4s.; Text, 2s. 6d.

4A. Practical Naval Architecture. A Treatise on Laying-off and Building Wood, Iron and Composite Ships. By S. J. P. Thearle. 2 vols. Plates, 5s.; Text, 2s. 6d.

4B. Theoretical Naval Architecture. A Treatise on the Calculations involved in Naval Design. By S. J. P. Thearle. 2 vols. Plates and Tables, 7s.; Text, 3s. 6d.

5. Pure Mathematics. By Edward Atkins, B.Sc. (Lond.) 2 vols. Vol. 1. Arithmetic, Algebra, Geometry and Plane Trigonometry. Vol. 2. Higher Parts of Algebra and Plane Trigonometry, together with Elementary Spherical Trigonometry, each 2s. 6d.

8. Acoustics, Light and Heat. By W. Lees, M.A., Edinburgh. 2s. 6d.

9. Magnetism and Electricity. By F. Guthrie, B.A., Ph.D., Royal School of Mines, London. 3s.

10. Inorganic Chemistry. By T. E. Thorpe, Ph.D., F.R.S.E. Professor of Chemistry, Leeds. With copious Index and Examination Questions. Vol. 1. Non-Metals, 3s.; Vol 2. Metals, 3s.

13. Mineralogy: General Principles of. By J. H. Collins, F.G.S. Illustrated with nearly 600 Woodcuts and Figures of Crystals. 2s. 6d. Vol. 2 *(in preparation)*.

14. Animal Physiology. By J. Cleland, M.D., F.R.S., Professor of Anatomy, Glasgow University. 2s. 6d.

19. Metallurgy. By W. H. Greenwood, A.R.S.M. In 2 vols. Vol. 1. Fuel, Iron, Steel, Tin, Antimony, Arsenic, Bismuth and Platinum. Vol. 2. Copper, Lead, Zinc, Mercury, Silver, Gold, Nickel, Cobalt and Aluminium. Each 2s. 6d.

20. Navigation. By Henry Evers, LL.D., Newcastle-on-Tyne.

22. Steam and the Steam Engine: Land, Marine and Locomotive. By Henry Evers, LL.D. New and Enlarged Edition, 3s.

23. Physical Geography. By J. Young, M.D., Professor of Natural History, Glasgow University. 2s. 6d.

CLASSICAL WORKS.

By **LEONHARD SCHMITZ, LL.D.,** *Classical Examiner, University of London.*

Introductory Grammar of the Latin Language. For use of Junior Classes. By Leonhard Schmitz, LL.D. Post 8vo, cloth, 1s. 6d.

Grammar of the Latin Language. For Middle and Higher Class Schools. By Leonhard Schmitz, LL.D. Post 8vo, cloth, 222 pp., 2s. 6d.

Exercises in Latin Prose Composition. Being a Companion Volume to the above. Prepared by G. F. H. Sykes, B.A., Forest House School, Woodford. Post 8vo, 276 pp., cloth, 2s. 6d. Key, 5s

Introductory Exercises in Latin Prose Composition. With References to Dr. Schmitz's Latin Grammar and to the Public School Latin Primer. By G. F. H. Sykes, B.A. Post 8vo, cloth, 112 pp., 1s. Key, 3s. 6d.

Cæsar.—De Bello Gallico, Books I. to VII. With Introduction, Examination Questions, copious Notes, Vocabulary, Maps, Plans and a Geographical Index. By Leonhard Schmitz, LL.D., Post 8vo, cloth, 3s. 6d. Also Book I. With Notes, Vocabulary, and Manuscript Paper, cloth, 1s. Books II. and III. together, cloth 1s.

Virgil.—The Æneid, Books I.–VI. With Life of Virgil and copious Notes by Leonhard Schmitz, LL.D. Post 8vo, cloth, 3s. 6d. Also in separate Books, with Manuscript Paper, cloth limp, 8d. each.

History of Latin Literature, from B.C. 753 to A.D. 640. By Leonhard Schmitz, LL.D. Post 8vo, cloth, 262 pp., 2s. 6d.

COMPLETE CATALOGUE FREE ON APPLICATION.

WILLIAM COLLINS, SONS & CO., LIMITED.

GLASGOW: 139 Stirling Road. | LONDON: Bridewell Place, E.C. | EDINBURGH: The Mound.

GOLD MEDAL, MELBOURNE, 1881,

BRONZE MEDAL (Highest Award), DUNDEE, 1882.

AWARDED TO

HUSBANDS,

SCIENTIFIC INSTRUMENT MAKER,

BRISTOL.

STUDENTS' MICROSCOPES, completed to order according to purposes required, at £3 3s., £3 10s., £4 4s., £4 10s., £5 5s., £6 6s., £7 7s.

HIGHER CLASS INSTRUMENTS, with Mechanical Stages, without Lenses, at £8, £12, £15 15s., £18 18s., £23.

Microscope Lenses, 1st, 2nd and 3rd qualities, Eyepieces, Accessory Apparatus and Materials, at London prices.

DRAWING INSTRUMENTS, in Cases, at 4/6, 5/6, 7/6, 10/6, 21/-, 25/-, 30/-, 42/-, 50/-, 63/-, 72/-, 84/-, 105/-.

HUSBANDS' GOLD MEDAL THEODOLITES AND LEVELS, as used by Melbourne and Sydney Government Surveyors. Illustrated descriptions with prices, free on application.

Special attention to Spectacles, adapted for Students' use.

REPAIRING IN EVERY BRANCH

PHOTOGRAPHIC APPARATUS, MATERIAL and CHEMICAL DEPÔT.

SPECIALITIES—

Husbands' Folding, Developing Lamps, 8/6.
Husbands' Instantaneous Shutter, 7/6 and 10/6.
Sensitive Paper and Dry Plates at reduced prices.

HUSBANDS,

8 St. Augustine's Parade, (CORNER OF DENMARK STREET,)

BRISTOL.

Established over 50 Years.

C. T. JEFFERIES & SONS,

REDCLIFF STREET,

BOOKSELLERS, BOOKBINDERS, &c.

Old Book Department.

C. T. J. & Sons beg to thank the Clergy and Gentry of Bristol and Clifton for their past patronage and wish to inform them that they have now restored the

CANYNGE CHAPEL

(Having been so much damaged by the late fire),

And also calls the attention of their Customers to a fine selection of Books in all classes of Literature, rare French and English Works of Fine Arts, Theological, Classical and the Sciences, recently purchased from various Public and Private Libraries, many in Handsome Bindings, of which Catalogues may be had in sections as published.

Public Institutions supplied with new and second-hand Books on advantageous terms. Libraries Catalogued or Valued. Books in any quantity purchased or exchanged.

Catalogue 98 containing a selection of works on Natural History and General Literature now ready, and with Catalogues 96 and 97 may be had post free on application.

H. FRANCE,

STATIONER & BOOKSELLER,

SCHOOL DEPÔT, &c.

Cheap Manuscript Books, Ruled Paper and Exercise Books, Drawing Books, College and School requisites.

16 ROYAL PROMENADE.

WILLIAM GEORGE,

Antiquarian & Historical Bookseller,

TOP OF PARK STREET

AND

BERKELEY SQUARE AVENUE, BRISTOL.

The One Hundredth Issue of "THE LIBRARY SUPPLY LISTS" is just ready.

Special Catalogues of Works on Archæology, America, India, Colonial History, European Languages, Rare and Curious Books.

Purchaser of Libraries. Several Collections now Cataloguing. Exporter.

J. W. ARROWSMITH, PRINTER, QUAY STREET, BRISTOL.

P
Univ.Col
B

UNIVERSITY COLLEGE,

BRISTOL.

APPENDIX TO THE CALENDAR.

SESSION 1882-83.

UNIVERSITY COLLEGE, BRISTOL.

APPENDIX TO THE CALENDAR.

SESSION 1882-83.

ORDINARY CERTIFICATES.

Ordinary Certificates are not granted to Students in Elementary Classes in Languages.

LIBRARY.

A small Library is attached to the College for the use of past and present Students. Application for the use of books should be made to the porter.

DAY LECTURES.

SESSION 1881-82.

THIRD TERM.

EXAMINATIONS OF DAY CLASSES.

LIST OF HONOURS.

ORGANIC CHEMISTRY.

Joseph A. Leon.

MATHEMATICS.

Elementary.

Division I. :—

Caroline Sturge.

Division II. :—

Mary E. I. Pocock,
Mary Williams.

Division III. :—

Ellen M. Leonard,
Edith M. Clarke,
Edward Lovell.

Advanced.

Amy K. Cooper.

EXPERIMENTAL PHYSICS.

Elementary.

Louisa M. Smith.

SURVEYING.

A. Marshall Hunt.

MORAL PHILOSOPHY.

Katharine H. Bradley,
Edith E. Cooper.

MODERN HISTORY.

Josephine M. W. Williams,
Amy K. Cooper,
Henrietta Whitwell,
Hiatt C. Baker.

ENGLISH LITERATURE.

Mary I. Ogilvie.

GREEK.

Elementary.

Division I. :—

George Eaves.

GERMAN.

Elementary.

Maria H. Fox.

Advanced.

Louisa M. Smith.

EVENING LECTURES.

POLITICAL ECONOMY.

Professor, A. MARSHALL, M.A.

The Lectures and Classes in this subject will be given on Wednesdays instead of on Tuesdays.

SESSION 1881-82.

THIRD TERM.

EXAMINATIONS OF EVENING CLASSES.

LIST OF HONOURS.

MATHEMATICS.

ELEMENTARY.

Division I.:—

Mary E. Rayson.

Division III.:—

Emma Hulbert.

BOTANY.

George H. Barker.

GREEK.

ADVANCED.

Marie Hymans.

LATIN.

ELEMENTARY.

Division I.:—

Myra E. Griffiths.

Division II.:—

Louisa Frank.

ADVANCED.

S. Kate Tuckey.

FRENCH.

Men.

ELEMENTARY.

Henry A. Onn

ADVANCED.

William H. Holloway,
Harry A. Hucker,
Joseph Avery.
William L. Jones.

Women.

ADVANCED.

Myra E. Griffiths.

The following External Examinations have been passed by Students of the College during the Session 1881-82:—

UNIVERSITY OF CAMBRIDGE.

HIGHER LOCAL EXAMINATION, 1882.

Group R.	*Class II.*	Alice Jenner.
A.	*I.*	Alice Jenner, Constance O'Brien, Florence O'Brien, Alice Ritson, Caroline Sturge, Ellen A Thomas, Katharine I. Williams,
	II.	Katherine G. Blake,
	III.	Mary E. I. Pocock, Frank Merrick.
B.	*I.*	Elizabeth W. Fry, Dorothea M. Jones, S. Kate Tuckey,
	II.	Hettie M. Hughes,
	III.	Clara Case, Alice Jenner.

Group C.	*Class III.*	Maria Ludlow, Mary E. 1. Pocock.
D.	*II.*	Clara Case, Katharine I. Williams, Frank Merrick,
	III.	Florence O'Brien.
E.	*II.*	Dorothea M. Jones, Helen M. Sharp,
	III.	Lucy Willey.
F.	*II.*	Frank Merrick.

UNIVERSITY OF LONDON.

MATRICULATION, JUNE, 1882.

First Division :—

Arthur Leche.

PRELIMINARY SCIENTIFIC (M.B.)

Second Division :—

Henry T. S. Aveline,
*George H. Barker,
Arthur H. Joseph,
Walter C. Swayne,
Frank J. Wethered.

* Passed also in Mathematics of Interm. Exam. in Science, and is admissible to B.Sc. Exam.

SCIENCE AND ART DEPARTMENT, SOUTH KENSINGTON.

FREEHAND DRAWING.

J. F. Gerald Fitzgerald - - *Pass.*

PERSPECTIVE.

Preston Weir - - - - *Pass.*

PRACTICAL PLANE AND SOLID GEOMETRY.

Elementary Stage.

Arthur E. Mills - - - - *2nd Class.*

Advanced Stage.

J. F. Gerald Fitzgerald - - *1st Class.*
William H. Mason - - - *2nd* "

MACHINE CONSTRUCTION AND DRAWING.

Elementary Stage.

Arthur E. Mills - - - - *1st Class.*
Arthur H. R. Pope - - - *2nd* "

MATHEMATICS—Stages 1, 2, 3.

Stage 2.

Joseph A. Leon - - - - *1st Class.*
J. F. Gerald Fitzgerald - - *2nd* "
William Griffiths - - - *2nd* "
Arthur E. Mills - - - - *2nd* "
William J. Rundle - - - *2nd* "

THEORETICAL MECHANICS.

Advanced Stage.

William H. Mason - - - *2nd Class.*

APPLIED MECHANICS.

Elementary Stage.

Arthur H. R. Pope - - - *2nd Class.*

Advanced Stage.

William H. Mason - - - *1st Class.*

SOUND, LIGHT AND HEAT.

Elementary Stage.

Joseph A. Leon - - - - *1st Class.*
William H. Mason - - - "

MAGNETISM AND ELECTRICITY.

Elementary Stage.

Joseph A. Leon - - - - *1st Class.*
William H. Mason - - - "

Advanced Stage.

J. F. Gerald Fitzgerald - - *1st Class.*

INORGANIC CHEMISTRY.

ELEMENTARY STAGE.

J. F. Gerald Fitzgerald - - *1st Class.*

GEOLOGY.

ELEMENTARY STAGE.

Joseph A. Leon - - - - *2nd Class.*

STEAM.

ELEMENTARY STAGE.

Edwin Baggs - - - - *2nd Class.*

ADVANCED STAGE.

William H. Mason - - - *2nd Class.*

PHYSIOGRAPHY.

ELEMENTARY STAGE.

Joseph A. Leon - - - - *1st Class.*

J. W. ARROWSMITH, PRINTER, QUAY STREET, BRISTOL.